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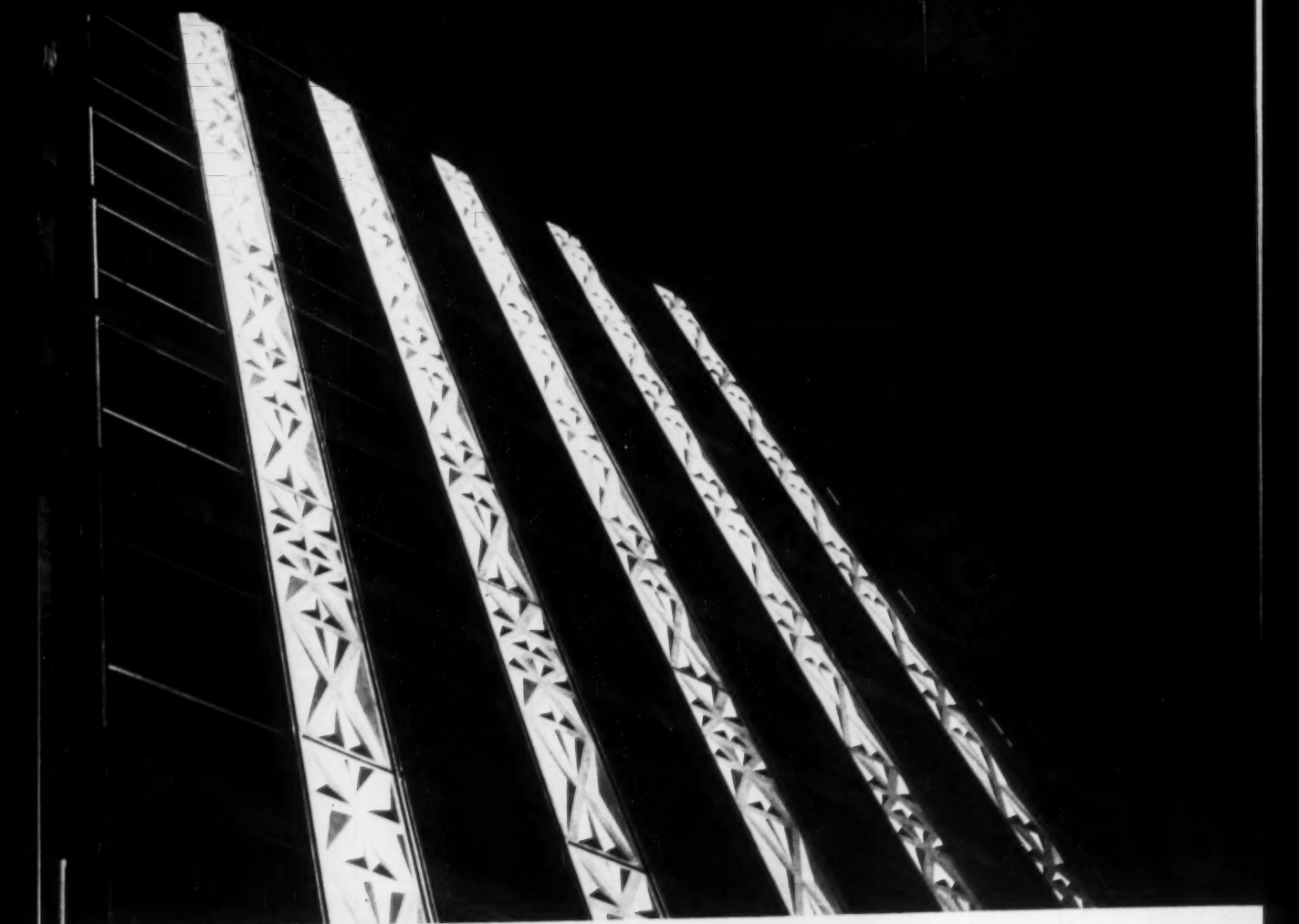
Skyscraper armoured in stainless steel *p. 33*

A McGRAW-HILL PUBLICATION

E B POWER
UNIVERSITY MICROFILMS IN
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In a variety of corrosive services

BYERS WROUGHT IRON

serves longer at lower cost per year

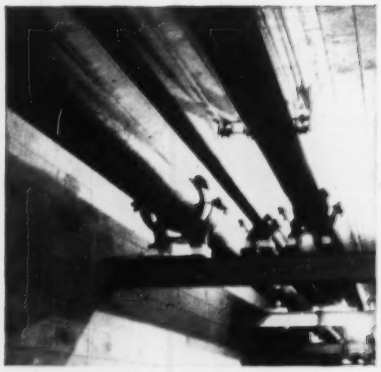
The true cost picture isn't given by construction costs alone. It must include *maintenance* costs also . . . and when these are included, the most durable materials have proved themselves as the most economical.

You'll find Byers Wrought Iron Pipe and plate the best material to use when you are building for permanence. The illustrations show a few of the many applications where it is serving successfully for others . . . and where it can serve and save for you. The use of wrought iron *adds only a trifle to the overall cost* of a project, and this small investment is returned many times over in extra service.

Wrought iron lasts longer, at lower cost per year because of its unique structure which resists corrosion and fatigue. Tiny fibers of glass-like iron silicate, distributed through the body of high-purity iron, halt and detour corrosive attack, discourage pitting and rapid penetration. These fibers also anchor the initial protective scale, which shields the underlying metal.

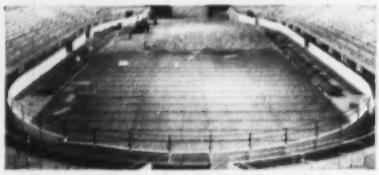
Our booklet, *The ABC's of Wrought Iron,* tells the story of this protection, and how it is bringing piping economy to a variety of applications where corrosion is a threat. Write for your copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. International Division: New York, N.Y. Available in Canada and throughout the world.



HEATING LINES

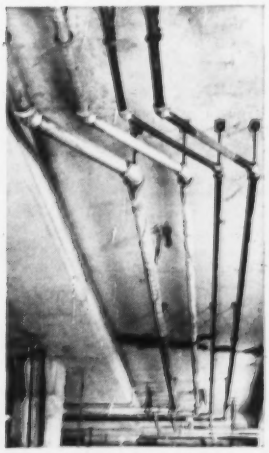
UNDERGROUND LINES



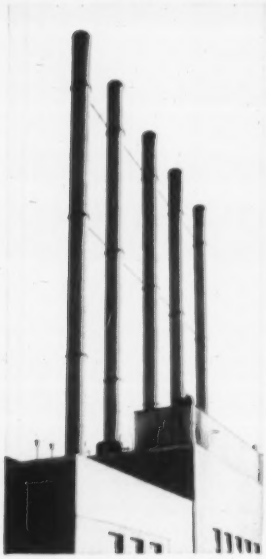
ICE RINKS

WATER WORKS, SEWAGE

SNOW MELTING. RADIANT HEATING



PLUMBING LINES



STACKS, BREECHINGS

AIR CONDITIONING SYSTEMS

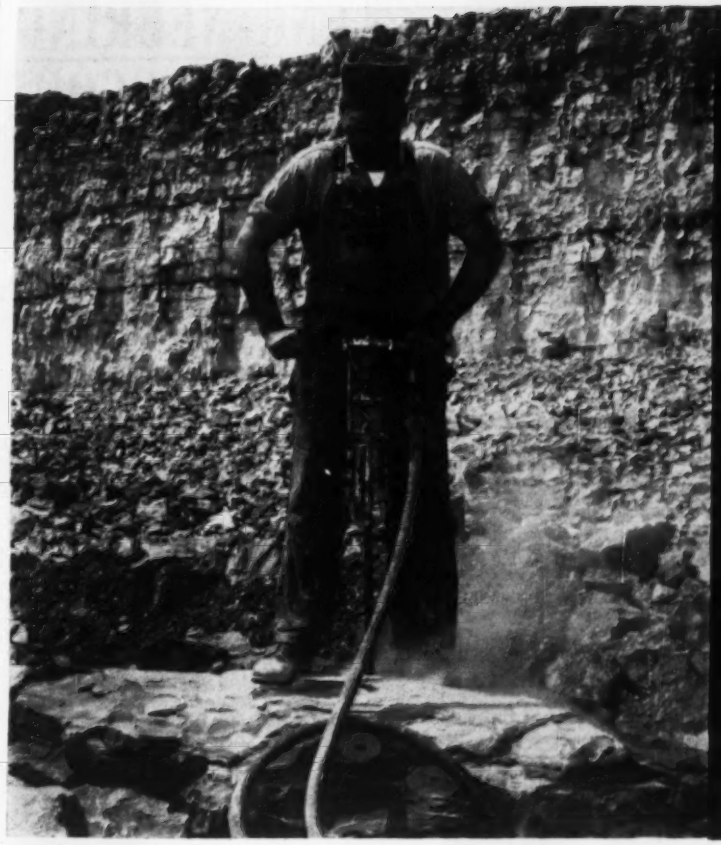
BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

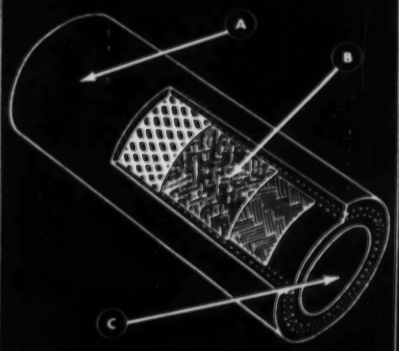
ELECTRIC FURNACE QUALITY STEEL PRODUCTS



GOODYEAR INDUSTRIAL PRODUCTS

GT-Specified

FLEXSTEEL AIR HOSE for the roughest mine, quarry and construction service



A Soft, tan-colored cover to resist cutting, gouging and abrasion

B Superstrong, braided steel wire, cord and fabric reinforcement to handle high pressures, resist crushing and kinking

C Special, synthetic, seamless tube resists both heat and oil

The rougher, the tougher the job

—the more you need **FLEXSTEEL** *air hose*

IN THE PICTURE, it looks like any ordinary air hose being used on this tough jackhammer job.

But it's not—it's the rugged new steel-backboned FLEXSTEEL hose. The G.T.M.—Goodyear Technical Man—designed it especially for the most punishing kinds of mine and quarry work.

There's extra ruggedness in every part of its construction: the special heat- and oil-resistant tube—the braided steel wire reinforcement—the impact- and abrasion-defying cover. Yet it's amazingly flexible and light in weight—easy to handle and move about the pit.

And—though it's relatively new—FLEXSTEEL is thoroughly proved. Many of the first users are already reporting far longer hose-life—with a substantial drop in their hose costs.

Where can you get FLEXSTEEL? Just contact the G.T.M., your Goodyear Distributor or write: Goodyear, Industrial Products Division, Akron 16, Ohio

YOUR GOODYEAR DISTRIBUTOR *can quickly supply you with Hose, Flat Belts, V-Belts, Packing or Rolls. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."*

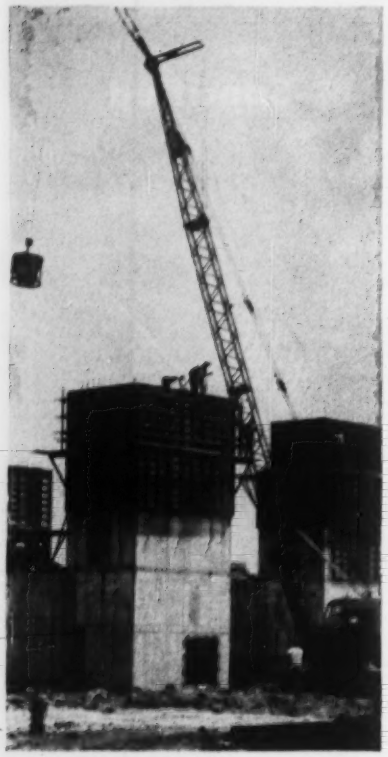
Flexsteel—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

GOODYEAR

THE GREATEST NAME IN RUBBER

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

Symons FIELD REPORT...



SYMONS FORMS USED ON TWA TEST CELLS ...

Five aircraft engine test cells, with exhaust and intake stacks 45 feet high, are being erected at Trans World Airlines' overhaul base at Mid-Continent International Airport, Kansas City, Mo.—the first cells of their kind in the United States.

These cells are on a concrete base, and 12,500 square feet of Symons Forms with Steel Cross Members were used for the 55,000 square feet of concrete forming required. Sharp Brothers Contracting Company, Kansas City was the general contractor.

TWA test cells are just one of many commercial, industrial, institutional and public works construction jobs for which Symons Forms are adaptable. Symons engineering staff gives complete service on the details of all forming jobs. Our salesmen are field-trained to give practical advice on form erection, pouring and stripping methods.

Symons Forms, Shores and Column Clamps may be rented with purchase option, all rentals to apply on purchase price. Symons Clamp & Mfg. Co., 4265 Diversey Ave., Dept. B6, Chicago 39, Ill.

In this unusual stripping procedure, panels are being removed by a worker seated in a bosun's chair suspended from a crane boom.

For More Information on
FORMS—CLAMPS—SHORES
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Publisher

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11

San Francisco,

WHAT is your answer when we ask you "Why does a company like MacDonald, Young & Nelson, Inc., buy 11 machines of one make?" You can have *only one answer.* They must like them and find that they make money!

Here are three of the 11 Northwests that MacDonald, Young & Nelson have bought working on San Francisco's Embarkadero. MacDonald, Young & Nelson is a fast moving outfit that gets things done and no small part of their ability is equipment.

Northwest brings you a plus production that comes with Northwest advantages. Talk to these repeat order buyers before you buy. Then let a Northwest Man tell you the rest of the story.

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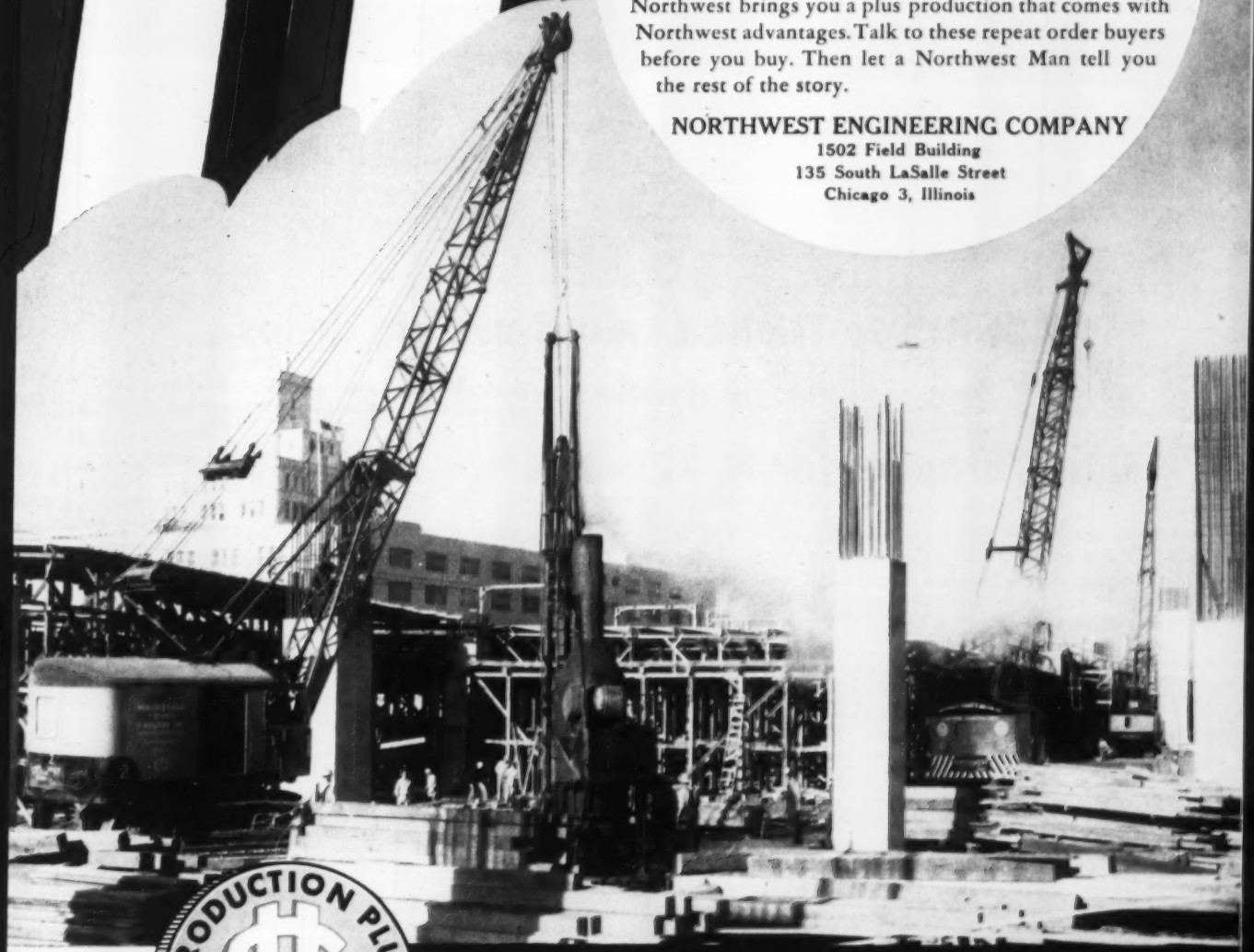
1502 Field Building
135 South LaSalle Street
Chicago 3, Illinois

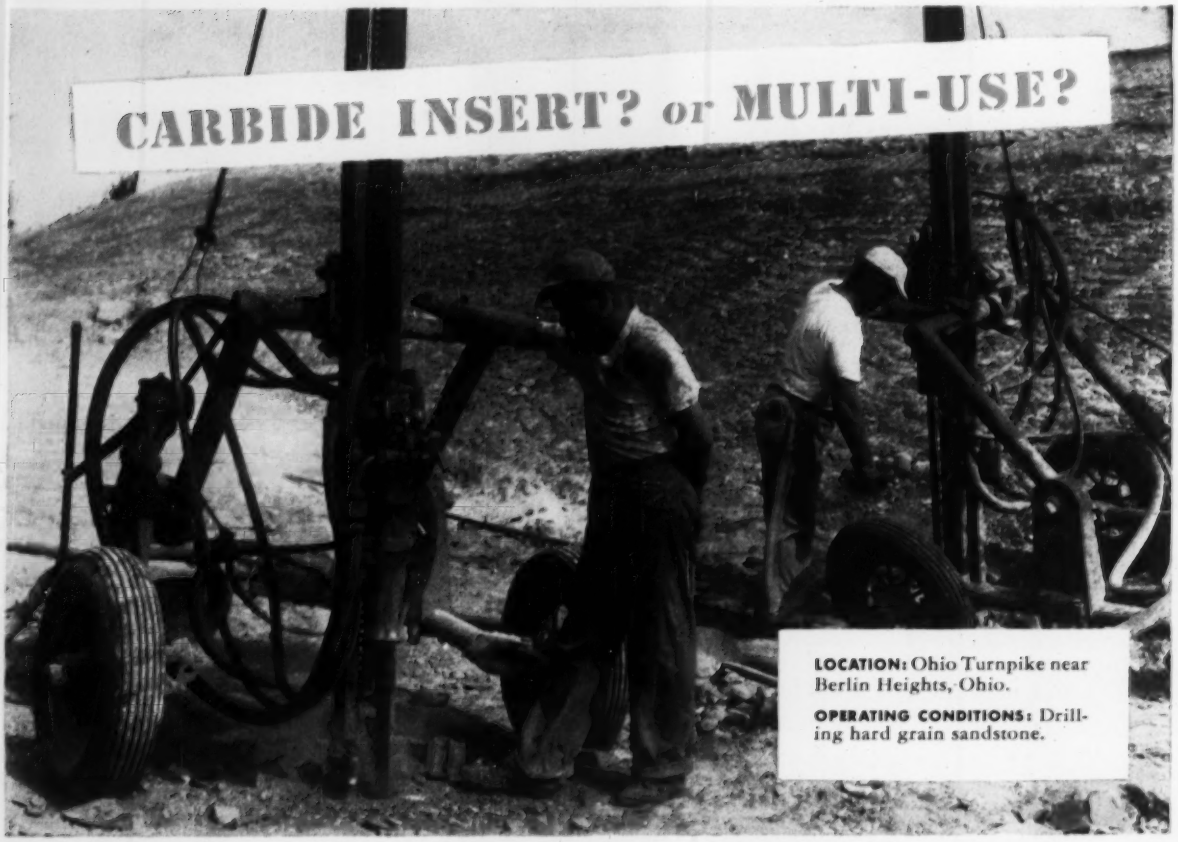


G-1-IC

PRODUCTION PLUS · MEANS MONEY ·

NORTHWEST

CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS


CARBIDE INSERT? or MULTI-USE?
LOCATION: Ohio Turnpike near Berlin Heights, Ohio.
OPERATING CONDITIONS: Drilling hard grain sandstone.

Switch to TIMKEN® multi-use bits helps lower cost of drilling sandstone on Ohio Turnpike for H. N. Rodgers & Sons Company

WHEN H. N. Rodgers & Sons Company started drilling 230,000 yards of sandstone on the Ohio Turnpike near Berlin Heights, Ohio, they found their costs were running too high. After analyzing their technique, they made some changes. One was a switch to Timken® multi-use bits. Now costs are down. And Timken multi-use bits have been used ever since.

Timken multi-use bits usually give best results when you drill ordinary ground. With correct and controlled reconditioning, they give the lowest cost per foot of hole when full increments of steel can be used.

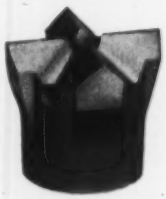
But they may not be the best answer for *all* your drilling problems!

When ground is hard or abrasive, Timken carbide insert bits drill faster and more economically. They're your best bit for constant-gauge holes, small diameter blast holes and extremely deep holes.

Timken multi-use and carbide insert bits also save time when your drillers change bits. They're interchangeable in the same thread series. And dozen of different Timken bits fit the same drill steel.

Both Timken multi-use and carbide insert bits are made from electric furnace Timken fine alloy steel. Both have special shoulder unions that protect threads from drilling impact.

To find out which type bit will cut costs most on your job, call on the Timken Rock Bit Engineering Service. Write: The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".



Timken threaded multi-use rock bit

Timken threaded carbide insert rock bit

your best bet for the best bit ***for every job***

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

WATERTIGHT AMVIT JOINTED CLAY PIPE SAVES UP TO 12% ON INSTALLATION COSTS

Borough of Milltown, N. J.

Borough Engineer
Robert J. Baier

Contractor
C. J. Pardun & Son

Says C. J. Pardun, President, C. J. Pardun & Son

"Despite wet trench conditions, we were able to cut costs and installation time on laying a 10-inch sanitary line for the Borough of Milltown, New Jersey", Mr. Pardun continues.

"Just as important, Amvit jointed clay pipe makes a watertight line. Prevents ground water infiltration and saves pumping and treating thousands of gallons of waste water."

The Amvit joint is built in, ready for installation. Since no special preparations are needed, the line is laid quickly and easily. Immediate back filling is possible. When the pipe is "pushed" together, the joint is in constant compression. Nothing, even water, can force its way in or out.

Amvit Jointed Clay Pipe is just one of the many products manufactured in our plants across the nation. American Vitrified Products Company also produces concrete pipe, clay pipe, flue liners—both glazed and unglazed and clay liner plates.

For more information, write or call American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you.

The Amvit joint is made of a new acid resistant plastic material with rubber characteristics. Like the pipe, the joints will not be harmed by any condition of underground service. The pipe is simply pushed together. The trench is then ready for backfilling.

SINCE 1900

AMERICAN

American Vitrified Products Company

CLEVELAND, OHIO

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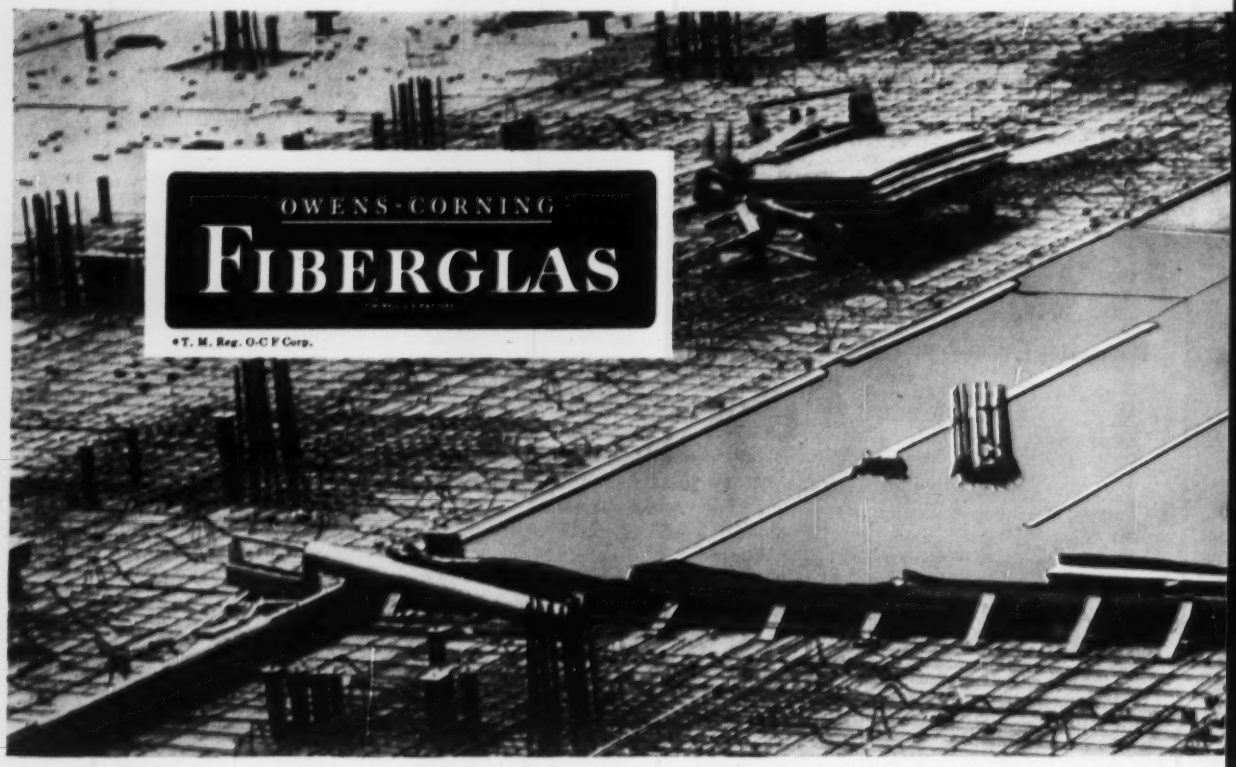
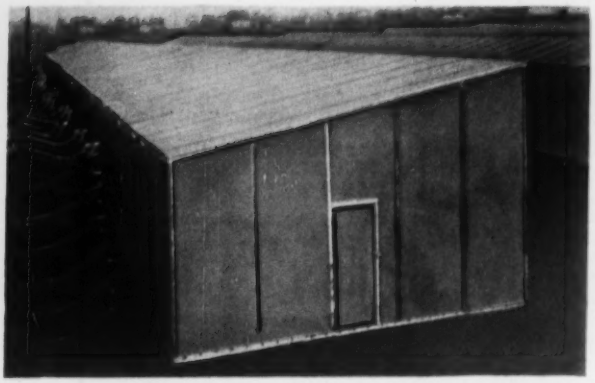


Here and now . . . AN ALL-PURPOSE

Fiberglas-reinforced weatherproof paper gives you a low-cost answer to the problem of positive moisture control



TEMPORARY SHELTERS! Big savings in time, labor and materials are gained here through use of Fiberglas-reinforced weatherproof papers. Such shelters give long, dry service.

OUTDOOR STORAGE! Unbeatable moisture resistance of Fiberglas-reinforced weatherproof papers assures long-lasting protection of lumber and equipment.

Owens-Corning Fiberglas Corporation does not manufacture paper. It supplies the Fiberglas reinforcement to paper manufacturers.

CONCRETE CURING! Cleaner, harder and more durable surfaces can be obtained with Fiberglas-reinforced weatherproof papers. These light-weight papers can be re-used up to a dozen times, providing excellent cover at remarkably low cost.

WEATHERPROOF PAPER

More than ever before, today's builders and contractors clamor for versatile materials that do more than one job. They've hit a bonanza of applications with economical, super-strong Fiberglas-reinforced weatherproof papers.

It's amazing the difference Fiberglas makes in reinforced papers for concrete curing, vapor barriers, sheathing protection and other applications. Wherever they're used, Fiberglas-reinforced weatherproof papers give you more value per dollar than any other type of reinforced paper.

At the heart of these flexible papers are moisture-proof Fiberglas reinforcing filaments – with the highest strength-weight ratio of all reinforcements. Weatherproof papers can be lighter in weight if they're reinforced with Fiberglas.

For all their versatility, Fiberglas-reinforced weatherproof papers cost no more than ordinary reinforced papers. Start right now to benefit from the extra protection and important economies they can give you.

SUB-FILL COVER! Even heavy construction traffic won't rip or tear Fiberglas-reinforced weatherproof papers used to separate slab from ground.

FREE!
SEND FOR NEW SAMPLE KIT
of Fiberglas-reinforced weatherproof papers, including complete listing of manufacturers. Address Owens-Corning Fiberglas Corporation, Dpt. 145 B-7, 598 Madison Ave., New York 22, N. Y.

how to cut costs on concrete finishing

Powerful, new STOW lightweight roto-trowel gives faster, smoother finishes!

Here is a new, rugged, lightweight rotary trowel that works fast, leaves surfaces really smooth! The G-24 Roto-Trowel weighs only 69 lbs. and because it is only 24 inches wide, can be easily carried anywhere, through doorways or down stairs . . . finishes so smoothly that hand work is no longer required. And it's so easy to use . . . you can be an expert in 15 minutes. Floats and finishes driveways, terraces, cellar floors, sidewalks, and porches. Trowel blade tilt can be controlled by the knob on the handle *while the machine is running*. A safety clutch control on the handle stops the trowel blades from rotating the instant the handle is released. A sturdy guard ring lets you work right up to walls and around pipes.

The Stow G-24 Roto-Trowel is low in cost, too, compared to large models. It has a 2.2 HP engine, making it the most powerful trowel in the low-price field. As one contractor said about the G-24, "This is one of the best buys I have ever made".

Send in this coupon, if you'd like more information. We'll send you a bulletin with on-the-job pictures, specifications, and prices. Write today.

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Please send G-24 Roto-Trowel bulletin showing on-the-job photos, specifications, prices.

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Reader Comment

Silicone Protected Concrete

SIR—Your article "Concrete Bridges on N. Y. Thruway Protected by Sprayed-on Silicone" (ENR Nov. 24, 1955, p. 93), contained an excellent discussion concerning the value of silicone treatment for portland cement concrete. However, we would like to offer some additional information for your consideration.

The decision to use the water soluble type of silicone water repellent was reached only after several years of study and test applications by the N. Y. State Department of Public Works in cooperation with the General Electric Company Silicone Products Department. General Electric SC-50, believed to be the first commercially available sodium methyl siliconate, was used for this work, and was the product upon which the N. Y. Thruway Authority based its specifications.

Furthermore, silicone-treated structures do not darken appreciably when they become wet. The light reflectance of silicone-treated concrete, even under adverse weather conditions, is a means of maintaining visibility of facia and piers of bridges. Increased visibility of structures will assist in providing safer driving conditions on our highways.

R. V. MACKEY, JR.
Technical Service Engineer
General Electric Co.
Waterford, N. Y.

Jobs in Highway Departments

SIR—Your editorial "Engineers for Highway Work" (ENR Jan. 16, 1955, p. 120) is very interesting, but did not cover all of the pertinent points involved.

The ARBA Committee on Recruitment and Placement of Highway Engineers of which the writer is chairman has made a study of this problem. As a result, a 6-point program was formulated which we feel sets forth minimum standards of employment practice for highway engineers.

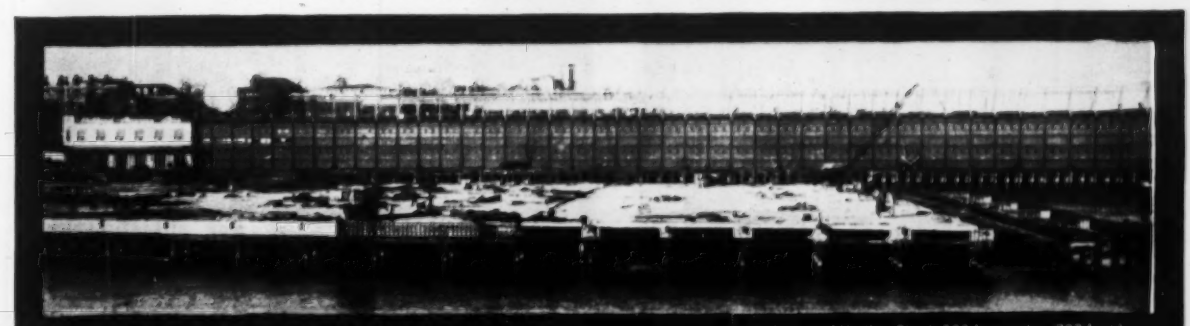
(*Continued on page 10*)

Engineering News-Record welcomes expression of opinion from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance.

Letters should be addressed: Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

ANOTHER PRESTRESSED CONCRETE PIER

for The Port of New York Authority



General view of pier deck nearing completion. Post-tensioned pile caps 21'-6" on centers are supported on steel H piles. Pier is 323 feet wide x 702 feet long.

Pulling 320-foot length of Roebling strand from barge-mounted reel into pile cap forms. Strand was delivered encased in flexible metal hose and with fittings attached ready for placement in forms.

Tensioning a strand while standing in railroad well. Use of single long-stroke center-hole ram and threaded connections cuts jacking time to minimum.

IT IS INTERESTING to recall that prestressed concrete was specified as an *alternate* to more conventional designs for Pier C. The results of that project were so satisfactory that prestressed concrete alone was specified for the new Pier A at Hoboken, N. J.

Roebling Tensioning Elements were used for pre-tensioning the deck stringers on both piers, and for post-tensioning the pile caps at Pier A. Several factors led to the choice of Roebling Strand Assemblies for the pile caps:

★ Machine fabricated strands permitted larger units and reduced the number of tensioning elements handled on the job;

★ For units exposed to tide action, Galvanized Strand Assemblies provided corrosion resistance while curing and minimized friction while tensioning.

★ 320-ft. assemblies complete with metal hose and fittings could be pulled into the forms (with stirrups in place) in 15 minutes;

★ Quick and easy tensioning with a standard center hole ram and threaded connections permitted supervision by regular personnel without need for specialists.

Precast stringers on the new pier, 5 ft. wide x 1 ft. deep and spanning between pile caps 21'—6" on centers, were pretensioned with over 400 miles of Roebling ⅜" 7-wire Uncoated Stress-Relieved Prestressed Concrete Strand.

Linear prestressing in America was initiated by Roebling. In fact, after two years of development and tests, Roebling assumed the role of "guinea pig" in 1946 and placed a prestressed concrete floor in its new Chicago warehouse.

Today, as the result of continuous development and participation in all types of prestressed projects, Roebling is the foremost supplier of tensioning materials in the industry. Why not ask the most dependable source for suggestions and advice on specific applications? Write Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, N. J.

Pier A was designed by Parsons, Brinckerhoff, Hall and Macdonald for The Port of New York Authority. Erection including stringer fabrication, by J. Rich Steers, Incorporated.

ROEBLING

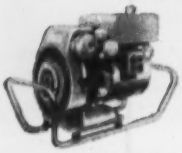
Subsidiary of The Colorado Fuel and Iron Corporation CFI

RUGGED

is the word for this

New ONAN 2-KW Electric Plant

Put it to work on your toughest jobs!



PORTABLE POWER

Stands up better under rough handling. Carrying -frame or 2-wheel dolly optional.

PRIMARY POWER

Runs longer in continuous day-after-day service. Dependable, economical.

A dependable source of electricity for emergency standby use

Built to do the job where other units won't stand up! This new 2,000-watt, A.C., 115 or 230-volt, gasoline-driven Onan plant can take all kinds of punishment and come back for more. It's powered by a husky, Onan 4-cycle, single-cylinder, engine with Stellite-faced rotating exhaust valve, larger longer-wearing bearings, and efficient, trouble-free air-cooling. The Onan-built generator is direct-connected, permanently aligned, and fully-protected for use under all climatic conditions.

The Onan "LK" is compact too . . . requiring less than 3 square feet of floor space. Heavy-duty construction throughout . . . yet it weighs only 235 pounds. In carrying frame or dolly-mounted it can be taken anywhere and is easily moved around on the job.

The rating of 2,000 watts is conservative, allowing ample overload. Fuel consumption at full rated load is less than one quart of gasoline per kilowatt hour, making the "LK" a low-cost source of primary power. Recoil rope starter on models for portable use; electric starting available for stationary installations; automatic controls for emergency standby use.

Wide range of accessories available

Write today for special "LK" folder!

D. W. ONAN & SONS INC.

Onan ELECTRIC PLANTS

2974 UNIVERSITY AVE. S.E. • MINNEAPOLIS 14, MINNESOTA

. . . Reader Comment

These six points are:

1. Merit system
2. Director of in-service training
3. In-service training program
4. Training program for undergraduates
5. Salary Schedules (adequate)
6. Job classifications

The report covering point No. 1 is in final form while those on the other five points are in first draft, but can be had from the ARBA headquarters at Washington.

The engineering educators are of the opinion that our graduates will not become interested in employment by the State Highway Departments until this program is adopted. Some few states have or are preparing to adopt such a program.

A realistic approach is necessary if the states are to secure their share of Highway Engineers.

MILES B. POTTER
Harris, Henry, Lantz & Potter
Engineers, Architects, Surveyors
Spring Valley, Pa.

Demented Dimensions

Through error, two of the dimensions given for the world's largest hangar (ENR Feb. 2, p. 24) suffered addition and subtraction. The height given for the building was 19 ft, actually it is 91 ft high. In reference to the construction of the roof purlins, it was stated that they spanned 36 ft and cantilevered about 52 ft into adjoining spans. In reality they cantilever only 5 ft.

CALENDAR

Association of Asphalt Paving Technologists, annual meeting, Hotel Cleveland, Cleveland, O., Feb. 13-15.

Associated General Contractors of America, national convention, Waldorf-Astoria Hotel, New York, N. Y., Feb. 13-16.

American Society of Civil Engineers, National winter convention, Baker Hotel, Dallas, Texas, Feb. 13-17.

National Society of Professional Engineers, annual spring meeting, Mayflower Hotel, Washington, D. C., Feb. 17-18.

American Concrete Institute, annual convention, Bellevue-Stratford Hotel, Philadelphia, Pa., Feb. 20-24.

American Concrete Pipe Association, annual convention, Broadmoor Hotel, Colorado Springs, Colo., March 6-10.

American Railway Engineering Association, annual meeting, Palmer House, Chicago, Ill., March 13-15.

Fifth Inter-American Sanitary Engineering Congress, Lima, Peru, March 19-25.

Purdue Industrial Waste Conference, Purdue Memorial Union, Lafayette, Ind., May 15-17.

Prestressed Concrete Institute, second annual convention, Hollywood Beach Hotel, Hollywood, Fla., May 16-18.

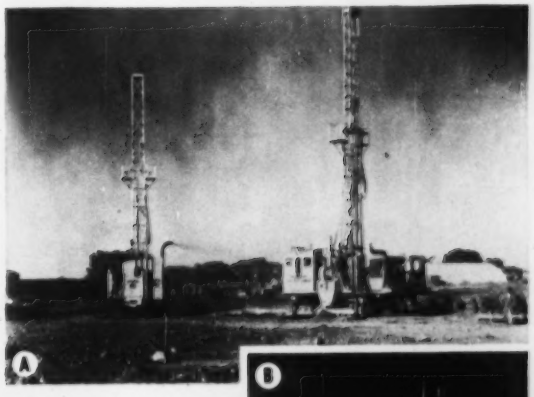
JOY DRILLS

on the St. Lawrence Seaway

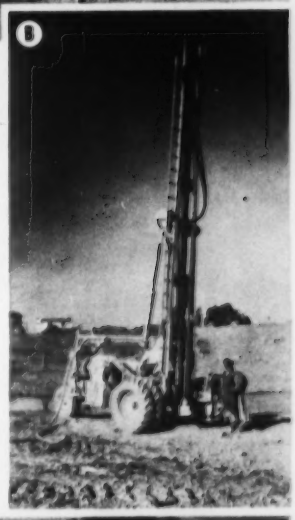
Unquestionably one of the greatest construction jobs of the century, the St. Lawrence Seaway has drawn top-flight contractors, engineers, and construction men from across the country. When completed, this joint power venture will provide 2½ million horsepower, as well as a deep-draft sea channel to mid-America.

A job of this magnitude calls for various sizes and types of drills, and Joy builds them all. During initial phases of the Seaway project, scores of Joy drills are already at work—hand-held drills, wagon drills, and blast-hole drills (both hammer and rotary) for large diameter holes.

Joy offers the most comprehensive line on the market today. Whether you are digging a seaway or a sewer, there are Joy drills for the job. For details write ***Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.*** In Canada: *Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*



A *Here are two of the three big Joy Champion air-blast rotaries now on the Seaway project. Joy Champions drill up to 12" diameter holes.*



B *Six Joy Challengers, world's biggest hammer drill (5¼"), are working for three Seaway contractors.*

C *At work on the Canadian side is this Joy Trac-Drill. It mounts twin extensible jibs (with power lift and power swing) and a Joy air compressor.*

Write for FREE Bulletin 58-24

Consult a Joy Engineer

for AIR COMPRESSORS • ROCK DRILLS • WAGON DRILLS
CORE DRILLS • BLAST HOLE DRILLS • PORTABLE HOISTS • FANS
BLOWERS • TUNNEL, QUARRY, MINE EQUIPMENT

W&W CS975-58

JOY

CONSTRUCTION EQUIPMENT MANUFACTURERS
FOR OVER HALF A CENTURY

Why buy a truck in the dark?

"Oh, kick me!" cries Merchant Neal,
In a posture hardly genteel.
He bought trucks in haste,
Then the costly fact faced,
That he'd missed the Dodge Dealer's Deal!

If you buy a new truck after looking at only one make, it's like making a deal in the dark. A smarter way to buy is to "*spotlight*" *real truck* value—weigh and compare competitive claims with these Dodge truck facts:

Most standard V-8 horsepower of all leading makes—½-ton through 3½-ton range. You'll make faster trips—get more work done!

Shortest turning radius. You'll maneuver in traffic, and park more easily.

Biggest cabs, with biggest wrap-around windshield. You'll enjoy more comfort, safer vision.

Highest payload capacities . . . pick-ups providing up to 22% more payload than others.

Prices down with the lowest.

Next truck you buy, don't deal in the dark. Turn a bright light on the facts. See Dodge before you buy.

GET THE DODGE DEALER'S DEAL BEFORE YOU DECIDE

DODGE
Job-Rated
TRUCKS
WITH THE *FORWARD* LOOK

✓ Check these advantages of

USS NATIONAL SEAMLESS STEEL PIPE PILES

You won't find a better combination of desirable load-bearing properties than these. That's why it's so important to specify National Seamless Steel Pipe Piles when planning heavy-duty foundation construction. Look what Seamless Pipe Piles have to offer:

- You get more strength with less weight because a circular cross section—*which National Seamless Pipe Piles have*—is structurally superior to any other shape for compression loading.
- National Seamless Pipe Piles help cut costs because they can be driven fast through tough formation—they take the punishment of large hammers without brooming. And they provide positive penetration under rugged driving conditions.
- National Seamless Pipe Piles give you greater loading capacity because they possess high compressive yield strength without loss of weldability. Piles are filled with concrete for even greater loading capacity.
- Because of their hollow form, National Seamless Pipe Piles can be checked for alignment and condition simply by lowering an electric light into the jetted pile. In open end piles, the bearing area can be checked to assure an even bearing.

We would like to discuss your foundation problems with you, whether you are constructing roads, bridges, or buildings. Perhaps we can help you save money and show you how to get a more solid foundation from USS National Seamless Steel Pipe Piles.

NATIONAL TUBE DIVISION
UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

NATIONAL Seamless PIPE AND TUBES

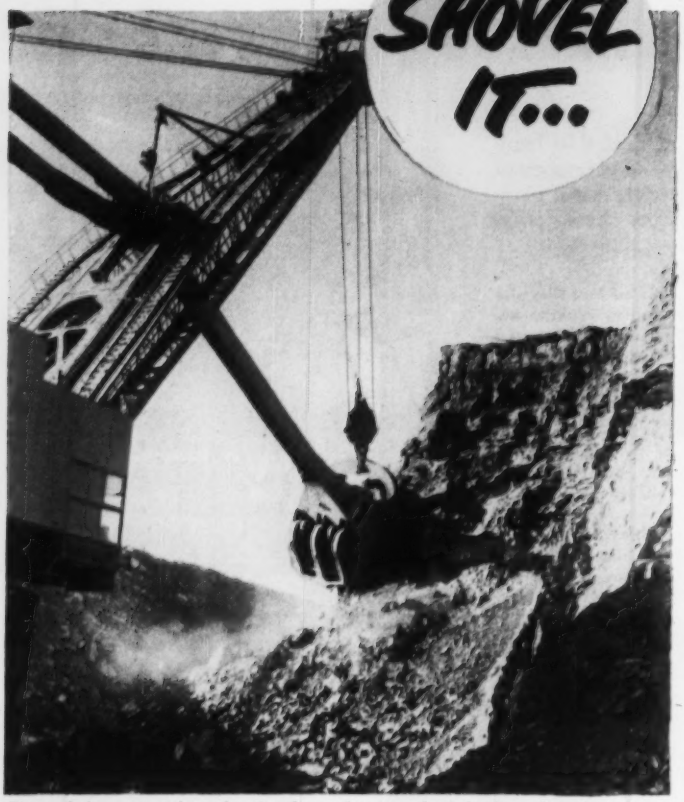
WELDS WITHOUT WELDS

SEE THE UNITED STATES STEEL HOUR. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

USS

UNITED STATES STEEL

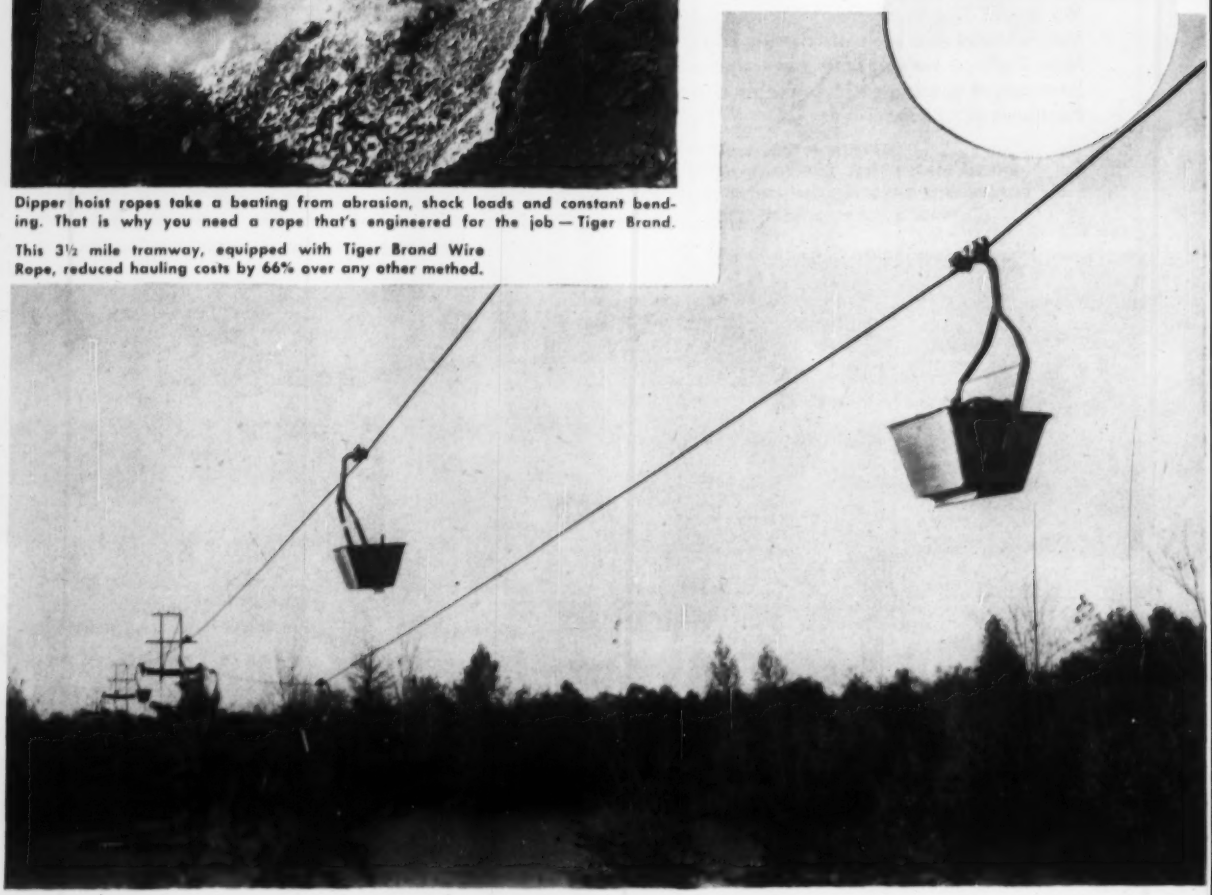
WHETHER YOU SHOVEL IT...



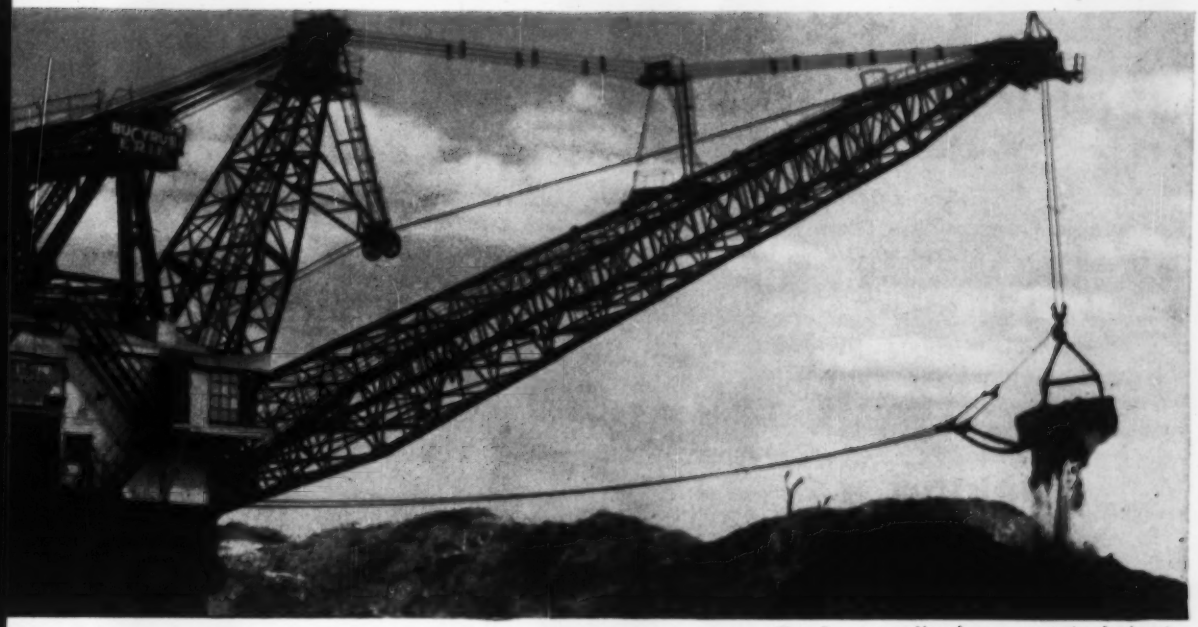
Dipper hoist ropes take a beating from abrasion, shock loads and constant bending. That is why you need a rope that's engineered for the job — Tiger Brand.

DRAG IT...

OR HAUL IT



This 3½ mile tramway, equipped with Tiger Brand Wire Rope, reduced hauling costs by 66% over any other method.



Tiger Brand drag Lines have a reputation for keeping costs down by moving more cubic yards per rope.

BY AIR... Tiger Brand delivers top yardage per dollar spent for wire rope

When you are moving materials in a big way, the cost per cubic yard may be a deciding factor in the type of equipment and wire rope you select. Whether you use shovels, draglines or tramways, the problem is to pick the rope that will give the best possible service on your job.

On shovels, Tiger Brand Wire Rope has run up some amazing records. Tiger Brand shovel hoist ropes are designed to combine flexibility, strength and resistance to abrasive wear as required by this class of service.

On draglines, where a lot of abrasive wear and abuse are encountered, Tiger Brand drag ropes have demonstrated time and again that the right rope for the job is the most economical.

For tramways, Tiger Brand track cables and traction ropes are recognized leaders.

For a personal guide to rope selection, send the coupon.

American Steel & Wire Division
Rockefeller Building, Dept. A-26
Cleveland 13, Ohio

Please send me your Wire Rope Recommendation Book, "The Right Rope for the Job."

Name .....
Company .....
Address .....
City ..... State .....

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS AMERICAN TIGER BRAND WIRE ROPE

Excellay Preformed

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UNITED STATES STEEL

JENKINS Fig. 106-A

The FIRST
Renewable Composition Disc
BRONZE GLOBE VALVE
150 lbs. Steam 300 lbs. O.W.G.
⅛ in. to 3 in.

Making a Work Horse a Champion

Take a Fig. 106-A apart. It's easy to see the reason why it's the "champion" of disc-equipped Bronze Globes. Every part, from heatproof handwheel to pipe ends, reflects the design and construction skill of generations of Jenkins Valve specialists.

Jenkins Bros. introduced the first renewable composition disc Globe . . . is still the only manufacturer of both valves *and* discs.

Fig. 106-A not only looks better — it proves out better in performance. In any comparison, its long-life, low-upkeep record has always set the standard. That is the true measure of valve cost — and it is the reason why industry's shrewdest buyers will settle for nothing less than Fig. 106-A quality.

The Fig. 106-A "family", with interchangeable parts, provides Globe, Angle, and Check patterns to meet 90% of average valve needs.

Ask your Jenkins Distributor for full information, or write: Jenkins Bros., 100 Park Ave., New York 17.

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JENKINS
LOOK FOR THE JENKINS DIAMOND
VALVES
SINCE 1864 TRADE JENKINS MARK
Jenkins Bros.

ENGINEERING NEWS-RECORD

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Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Price 35¢ each copy except Annual Cost Issue. Semi-annual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

THE CONSTRUCTION WEEK

BOOSTING CONSTRUCTION'S EFFICIENCY—An efficiency expert, stopwatch in hand, may become as common a sight on large construction projects, in the not-too-distant future, as in big industrial plants. Prospects for improving construction efficiency by time studies and programming were pointed out at a construction conference late last month. In addition, a suggestion was advanced that construction men investigate a new tool—operations research—a method of analyzing repetitive operations. (page 24).

BUILDING TRADES STAKE OUT CLAIMS—While mapping out their biggest membership drive in history—up to 1,000,000 new members primarily in the fields of homebuilding and southern industrial construction—the AFL-CIO building trades brushed again last week with industrial unions over performance of construction and maintenance work by production workers (page 82).

The first test case over the explosive issue that troubled the craft unions when the AFL and CIO merged stems from a dispute over conversion work at the Detroit plant of Studebaker-Packard and comes at a time when guaranteed annual wage plans may for the first time prove to be a significant factor in the overall picture. With the building trades standing firm on their claim to construction work in the factory field, the issue has gone before both the new Building Trades-Industrial Union Department Committee and the AFL-CIO Executive Council, meeting in Miami.

TOWARD CUTTING COSTS—The National Association of Home Builders and Producers' Council Inc. have joined forces in a campaign to further standardization of homebuilding components. Their technical and research sections will work on development of sets of standard dimensions. Then will come the all important selling job necessary to induce manufacturers to make and builders to use the standardized products. Initial attention will be given to door and window openings.

TRAFFIC TAKES ITS TOLL—Ever since 1913 the National Safety Council has been keeping track of the steady climb in motor vehicle deaths. Last week it totaled up 1955's traffic toll: 38,300 deaths, 1,350,000 injuries. Fatalities were up 8% over 1954. The death rate for 100-million vehicle miles was 6.4%—2% higher than in 1954. New Jersey was one state that could afford to stress its safety record (p. 25). Deaths on its streets and highways decreased by 2%. And fatalities on its 118-mi turnpike were kept down to 26 for a rate of 2.76 per 100-million vehicle miles.

ONE OF A SERIES:

What makes a cylindrical roller bearing good?

RETAINERS

"requirement-engineered" for your kind of service

The basic parts of a roller bearing are the rollers, the races, and the *retainer* which locates and guides the rollers. There are significant differences in the design and construction of retainers, which influence bearing cost and performance. Some are simple and economical, well adapted for volume production; others are more costly but insure improved roller guidance, or cooler and smoother operation, or longer heavy-duty service. Here are the seven basic types in current use.

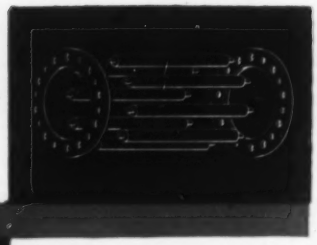
HYATT MAKES ALL SEVEN TYPES . . . EACH THE FINEST OF ITS KIND! You will find complete details in HYATT General Catalog No. 150, or your nearby HYATT Sales Engineer will gladly help you choose the type best suited to your requirements. Remember, HYATT is America's *first* and *foremost* maker of cylindrical roller bearings. Hyatt Bearings Division of General Motors, Harrison, New Jersey.

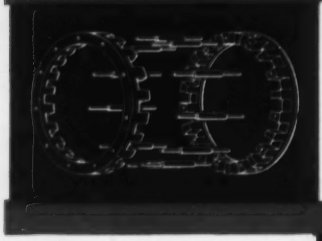
GM GENERAL MOTORS

HYATT

ROLLER BEARINGS

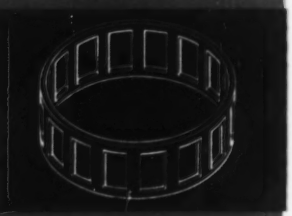
TRUNNIONED ROLLER CAGE—Economical for volume use on thin-annulus bearings. End rings are hardened steel stampings, connected by riveted bars interspersed between rollers to form an integral unit. Races can be omitted if desired.

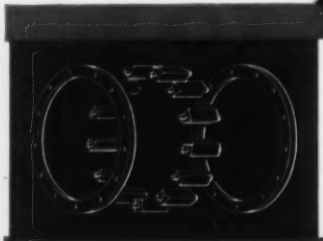




POCKETED END RING CAGE—Designed for fairly large bore bearings in heavy-duty service. Rollers are guided accurately by pockets drilled in bronze end rings. Riveted connecting bars form an integral unit, so races can be omitted if desired.

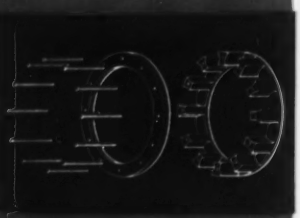
STAMPED STEEL SEPARATOR—Economical for volume use on wide range of bearings with short rollers. A single steel stamping with bars coined to conform to roller contour. Simple, open design assures large lubricant capacity and good circulation.

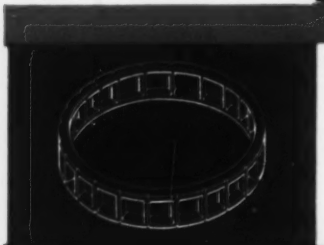




FORMED BAR CAGE—Well adapted for volume use on heavy-duty bearings. Hardened steel end rings are connected by cold-rolled shaped bars conforming to roller diameter. Insures quiet operation, better roller guidance, and the smooth surface of bars protects rollers.

DRILLED POCKET CAGE—Used on better-grade bearings to provide extremely close control of rollers, which operate in pockets drilled and reamed in bronze cylinder. Riveted ring on one end retains rollers permanently, so races may be omitted if desired.





SEPARABLE BROACHED POCKET CAGE—Used only on finest high-speed bearings. An integral bronze cylinder with pockets broached for maximum uniformity. Insures minimum friction, better oil circulation for cooling. Rollers can be removed for inspection.

NON-SEPARABLE BROACHED POCKET CAGE—Similar to the above and offers all the same operating advantages. Used for "blind" installations where rollers must be retained with inner or outer race. Roller drop controlled by deforming bars after rollers are placed.

WASHINGTON OBSERVER

The Administration is being pushed to do more for Housing by Democrats in Congress. Two committees have come up with detailed reports on the soft spots.

Senator Sparkman's committee says 1,500,000 starts per year is the minimum the country should be building.

Rep. Rains' House committee hits at slum clearance and urban renewal. The committee says unnecessary red tape and a timid attitude by housing officials is responsible for a poor record under these programs.

Families displaced by blighted area programs should get more help for buying their own homes—no down payment and longer mortgages.

The program to build new rental housing in cleared areas is bogged down "hopelessly," Rains finds.

Larger profit allowance for builders of low-rent rental housing is proposed. Now, builders are allowed 5% to 9% of cost of construction alone, not counting land, architects' fees, and overhead.

Both these committees will be acting on housing legislation this year, and the new reports, based on extensive hearings last fall, indicate strong sentiment for more federal help for homebuilding.

•

The Administration is using FNMA to help support home mortgage buying. This week's sale of $100 million of debentures for nine months is designed to enable the agency to continue purchases of VA and FHA mortgages. FNMA is tapping sources of capital that don't ordinarily buy home mortgages; hence, there's a net gain of funds for mortgage paper.

The agency's role would be expanded if some Democrats have their way. They want Fanny Mae to be able to help out by guaranteeing private loans to builders to carry them over until the house is completed and the mortgage made. This kind of money, normally available from banks, is particularly tight right now.

•

School construction legislation is bogged down—and badly. Unless a new effort by both the Administration and Democratic leaders comes quickly, chances are nothing will be done this year.

The House Rules Committee is sitting on the legislation. Chairman Howard Smith is opposed to any legislation, and is protecting southern congressmen who oppose the anti-discrimination amendment that Rep. Adam Clayton Powell will offer once the bill gets to the House.

Republicans are favoring the anti-bias amendment—some who oppose federal aid will vote for the Powell amendment in order to insure enough southern opposition in the Senate to defeat the whole program.

Chairman Smith is putting the bill at the bottom of his list, and will keep it there unless the Administration and Democratic leaders exert new pressure, and come to some kind of agreement on how to handle the Powell amendment, once the Rules Committee acts.

•

Passage of the Upper Colorado project is just about certain. Opposition in big blocs is fading away, with southern California groups—objecting to the project's water use plan—standing almost alone against the huge program. Dropping of the Echo Park Dam, which conservationists had opposed, strengthened the pro-Upper Colorado chances.

The legislation is ready for House debate. The Senate voted an okay last year. The House Interior Committee is going to seek amendment to the legislation that will specify the funds from power revenues that will be used for irrigation. The amendments would earmark for irrigation: 46% of power revenues for Colorado; Utah, 21.5%; Wyoming, 15.5%; New Mexico, 17%.

Capacity of cement plant lifted 77% with the help of U. S. Rubber belting

View of new conveyor gallery coming from No. 2 primary crusher. This cement plant uses over a mile of U.S. Belts (10 belts in all)—to handle crushed limestone rock, wet filter cake and coal.

View of U.S. Giant Style YN Conveyor Belt carrying crushed limestone rock.

The recent expansion and modernization of a midwest cement plant lifted capacity 77%, from 4500 barrels to 8000 barrels a day. During the planning stage, United States Rubber Company's 3-Way Engineering service got on the job. By working with engineers of the conveyor system and engineers of the cement plant, the most efficient system to handle the increased capacity of the plant was designed and built. In this case "U. S." engineers recommended U. S. Giant® Style YN Conveyor Belting utilizing nylon for troughability and superior impact resistance. The "U. S." 3-Way Engineering service is available for any materials-handling problem. It is a service that will always produce an efficient low cost haulage system, whether the installation is large or small.

The "U. S." belting line contains a belt for handling any type of material. Whatever your haulage problem may be, U. S. Conveyor Belting is obtainable from any of our 27 District Sales Offices or write to us at Rockefeller Center, New York 20, N. Y.

US RUBBER

Mechanical Goods Division

United States Rubber

Rep. Fallon's New Highway Bill Proposes That . . .

- $37.3 billion in federal funds be spent over a 13-year period
- Matching be on 90-10 basis for 40,000-mi interstate system and 50-50 on other roads
- States get credit for toll and free roads that could be incorporated in the interstate system
- Control of access remain with federal government
- States must hold down size-weight limits on trucks to those in effect March 1, 1956

Combined with new tax provisions it provides . . .

A Second Chance for the "Grand Plan"

The stage was set this week for a new round of debate on federal highway legislation, as the House Ways and Means Committee completed work on tax provisions proposed for incorporation in the revised Fallon highway bill.

The proposed tax measure calls for an increase of 1 cent on both gasoline and diesel fuel. Tire taxes would be increased from 5 to 8 cents per lb and a new tax would be levied on camelback—used in recapping—at a rate of 3 cents per lb. Further, the excise tax on trucks, busses and truck-trailers would be increased from 8% to 10%. Total income from these additional taxes—which would go into effect July—is estimated at $12.3 billion for the 15 years over which the collections would be extended.

The Fallon Bill would spend $24.8 billion in the interstate system over a 13-year period from 1957 to 1969 (spending would actually hit $25 billion since it includes $175 million already authorized for fiscal 1957). Provisions run much the same as last year's bill, defeated in the House. Matching by the states would be on a 90-10 basis for the 40,000 mile interstate system and 50-50 on the other roads.

The Fallon Bill has been held in the House Public Works Committee until the tax measure cleared the Ways and Means Committee. The two will be joined before they come up for action on the House floor.

However, the whole highway program has many legislative hurdles ahead of it. There are many issues—besides the question of voting for a big tax bill just before elections—that can throw off the plans of the leaders trying to get the legislation through both the House and Senate during the next few months.

These include working out the formula for allotting the tax money to the states for their spending, size-weight limitations for trucks, control of access to the highways, paying the cost of relocating utilities, provision for service facilities such as restaurants and gas stations.

And you can safely bet that once again the big controversy will be over giving the states funds to reimburse them for toll highways now being built or already built.

On all these issues, legislative leaders say, the bill as introduced represents a starting point—the best combination of all these ingredients the House Democrats could devise at this time. Undoubtedly many of these provisions will be modified considerably.

• **Toll Credits?**—Toll roads are a case in point. But the Fallon Bill gives state credit for toll roads already built. But many congressmen are wary of this use of tax money—unless the money is to be used to pay off toll bonds and make the facility a free road.

The theory behind putting this toll-road credit provision in the bill is that in the House it will attract the votes of the big delegations from New York, New Jersey, Ohio and other states with toll roads. Then, if approved by the House, the provision would be almost surely voted down in the Senate; senators from the non-toll road, under-populated states could veto any such provision.

Fallon has proposed that states get credit for both toll and free roads located on the interstate system that measure up to the system's standard of construction. Free roads would be figured on a depreciated basis, plus 10% of the total amount of any federal-aid funds used in its construction would be subtracted and what is left would be counted as credit for the road.

This credit for highways that meet the new interstate standards could be used by the state to build highway projects on its primary road system—the next most-travelled highway mileage—following regular federal-aid procedures. However, this can be done only if all federal-aid funds apportioned to the state have been spent and all funds allocated to the state under the Fallon Bill have been contracted.

Toll roads completed prior to Dec. 31, 1951 could get up to 40% of actual construction cost, and those finished between Dec. 31, 1951 and Dec. 31, 1955 would be allowed up to 70% credit. Roads finished after Dec. 31, 1955 would get credit for actual construction cost less 10%. And any toll road, bridge or tunnel that forms a logical segment of the interstate system could be incorporated in it, if the construction meets certain standards.

States would have an option of using the credit money from these roads two ways: either to retire bonds and free the roads, or for more building on the primary system—provided all other federal-aid money had been used.

• **Spending Plans**—Under the new bill, federal spending for the 13-year period would go like this:

For the interstate system—$25 bil-

lion; other regular systems $11.4 billion; federal funds for public domain roads—$972 million. States would put up $14.1 billion in matching funds for the interstate and regular systems to give an over-all expenditure of $51.5 billion extending over the 13-year period.

The amount of money that each state gets in any given year is determined by percentage of the total federal funds it needs to complete its portion of the interstate system. For example, if a state—as of the passage of the bill—requires 2% of the $27.5 billion total federal funds or $550 million to complete its portion of the system, then the state will receive 2% of each yearly allocation for the 13 years that the program will run.

Spending would start in fiscal 1957 at $1.2 billion and climb to $2.3 billion in 1964 and 1965, then decrease to $1 billion in 1969. Spending for most years would run a little over $2 billion.

Other federal-aid highway money—primary, secondary and urban—would be increased by $25 million for fiscal 1957 through 1959, making a total of $725 million for 1957; $750 million for 1958; and $775 million for 1959. Then the bill says the intent of Congress is to continue raising this $25 billion each year through 1969.

Here are some other important provisions:

- States would have to hold down the size-weight limits of trucks to those in effect March 1, 1956; or the maximum recommendations made by the American Association of State Highway Officials in 1946—either one could be used. But, the bill directs the Secretary of Commerce to make new recommendations on size-weights to Congress by March 1, 1959.
- States have the option of paying the cost of relocating utility facilities when this is necessary because of construction on a federal-aid project. If they do so, then states will be reimbursed on the same basis as the federal-state matching for the project.
- Control of access remains with the federal government. States will have to get permission to add points of access or exit from the interstate system. No commercial establishments will be allowed on the rights-of-way, and states are told not to allow monopolies—gasoline stations, restaurants—to crop up along the interstate system.

Also the official name of the interstate system would be changed to the "National System of Interstate and Defense Highways."

There is no "prevailing wage" provision in the Fallon Bill, but pressure is growing for this to be included in committee.

Heavy Construction Trucks: They're a Weighty Problem

A bill before New Jersey's legislature would repeal a state-law provision that permits construction trucks to exceed weight limits established for other vehicles upon payment of a special fee.

The special-license provision—part of a 1950 statute that revised registration fees for commercial vehicles—reportedly has resulted in wide-spread violation and has been difficult to enforce.

Under terms of this provision, builders' trucks are limited to a speed of 30 mi an hour and to operating within a radius of 30 mi from headquarters of a construction job.

Tidal Power at Passamaquoddy

Here is the project, or a reasonable facsimile thereof, for which President Eisenhower signed a bill last week authorizing a $3-million economic feasibility study by the International Joint Commission on United States-Canadian Boundary Waters. The so-called Passamaquoddy project, which the U. S. started and abandoned in the '30s, was inaccurately named because it included only the facilities south of the border on Cobscook Bay. With Canada in the picture this time, the potentialities of the upper pool in Passamaquoddy Bay can be included in the study. This time it is truly a Passamaquoddy project that will be under investigation.

Appropriation hearings on the authorization will be held in March; the President's Budget Message asked $1 million this fiscal year. With the U. S. to provide all the funds for this study, it is expected that IJC will assign the task to Army Engineers, with work to start by fall.

Equipment distributors to contractors . . .

"You Can't Stay in Business at a Loss"

With more money in the construction business now than ever before—and prospects of a continuation of that happy condition—manufacturers of construction equipment and their distributors are looking for another banner year. But they're inclined to be just a little wary of the health of the business that's their best customer.

That's about the consensus of the corridor and hospitality room conversations of last week's mammoth 37th annual meeting of the Associated Equipment Distributors at Chicago.

Both distributors and manufacturers are agreed on these points:

They've had a good year, they've sold a lot of equipment (may be worth $1.25 billion in total, though a consolidated figure is hard to come by), and there's every prospect of continuation of boom times for construction. And their activities are probably one of the best barometers available on the construction industry.

But—though there was no public discussion of the matter—there are signs appearing here and there that construction's tremendous bloom of health may cover a number of unhealthy spots that need attention.

Almost universally, you can get a lot of head-shaking out of the distributors when you ask them about the business practices of the contractors. Most expressed themselves as amazed at least—and occasionally dismayed—at how many of their customers have been taking jobs at or below cost in the past year, and continue to try to operate on that basis.

"You can talk all you like about keeping the organization together, about keeping good machines and good crews at work, and other such things," said one dealer, "but you can't stay in business at a loss."

The manufacturers and the distributors are keeping a wary eye on the increasing mortality rate among contracting firms. Even though these failures are comparatively minor, in relation to the nearly 400,000 contractors of all types now reportedly in business, the fact that the rate grows is disturbing to many.

Another item: There are spotty reports that some of the dealers are getting into the same predicament the automakers have complained of: It's too easy to buy new equipment on terms. Older equipment moving back into the market isn't selling too well, commissions, therefore, are being shaved to make new sales. Some equipment—like truck-trailers for hauling—isn't much affected by trade-ins. But the more popular types of tracked or wheeled machines are.

• **Optimism is key**—Still the general tone of this odd convention was optimism. It's an odd convention because of its studied informality. Actually, it is a carefully set up meeting place where distributors can walk from one manufacturer's convention headquarters room to another, discussing what's new, how's business, and more intimate details of his business relationship with the parent firm. The three "convention" sessions on three separate days, took only a few hours each, and were devoted to association business and general discussions of business practices. All the rest of the time was left free for private business conversations.

A room-by-room and almost delegate-by-delegate check for opinion and comment, however, turned up general agreement that there is no slackening in sight for the construction industry, very particularly with the prospects of some kind of a highway program by the federal government, and likelihood of other measures to push construction of schools and housing.

• **Business side**—On the business side of the picture, the most outstanding fact seemed to be this: Manufacturers have virtually halted their race for more and more power in their machines, and more and more gadetry.

STANLEY F. LASKEY, president of Northwestern Equipment, Inc., Fargo, N. D., was elected AED head for 1956.

They've halted that race for physical reasons—most are agreed that the power vs. weight and size factors of present engines have reached an economic balance.

So emphasis is now and for some time to come will be on the dealer and service organizations, in a race to hold sales position. Service, in the form of advice and consultation, and in repairs and repair parts, is the focal point of the manufacturer's drive.

Training films, factory training schools, better working prints for dealers were much in evidence.

Also on the business side—and from the viewpoint of both the manufacturer and dealer—there was one conspicuous dark spot: wire rope. A check of company representatives indicated the continuing presence of a price competition that has driven wire rope prices down to a point where both dealer and manufacturer complain they make no profit at all—despite record breaking volumes in 1955.

There were few prepared speeches—the real interest of the business sessions being reflected chiefly in round-table panel presentations and discussions of problems close to the heart of the distributor as well as the manufacturer. Typical of these sessions which seem to be growing in popularity at the AED annual meetings was one entitled, "AED Court of Inquiry." Headed by seven equipment distributors, and an equal number of equipment manufacturers, this two-hour session dug pretty deep into a great number of distributor-manufacturer-contractor problems facing the industry today.

• **New officers**—Stanley F. Laskey, president, Northwestern Equipment, Inc., Fargo, N. D., was elected president of AED, succeeding Ray J. Finn, of Bode-Finn Co., Cincinnati. L. Miner Dollen, Telford Equipment Co., Lansing, Mich., was moved up to fill the post of executive vice president, vacated by Mr. Laskey, while H. D. Anderson, Rish Equipment Co., Bluefield, W. Va., was re-elected to a second term as vice president. F. J. Fitzpatrick, Parker-Anner Co., Hyde Park, Mass., was also elected vice president of the association, and John R. Borchert, Borchert-Ingersoll, Inc., St. Paul, Minn., was named treasurer. D. C. Campbell, Tractors and Equipment Ltd., Fredericton, New Brunswick, was named to the post of Canadian vice president of the association, succeeding M. F. MacDonald. P. D. Hermann is executive secretary.

UCLA conference asks the question . . .

Can Construction Be More Efficient?

Can construction operations be made more efficient? That was the question raised by a two-day conference on construction operations held in Los Angeles late in January.

The answer seemed to be that development of the science of construction provides new opportunity for application of time and motion studies and operations research techniques used in industrial operations. And cost-cutting methods of operational planning are available.

But a construction man sitting in on the sessions might conclude that such methods are available only for large projects or big construction firms.

The sessions were sponsored by the University of California, Los Angeles, with the American Society of Civil Engineers' Construction Division cooperating. In opening the conference UCLA's engineering dean, L. M. K. Boelter, challenged the nearly 200 construction men in attendance to use industrial techniques on construction operations. He credited production and construction groups with being the only people that bring ideas into being, and he pointed to similarities in their operations. But he inferred that the construction industry is far behind in efficiency. Other speakers submitted ideas from the production industry.

• **Big construction**—Some of America's biggest firms represented at the meeting, told how planning and construction control made their operations more efficient. Some of the ideas presented can be applied to small construction operations—but they are not universally applicable.

Robert L. Cashen of the H. K. Ferguson Co. discussed the work of planning engineers with his firm. Their main function is the preparation of "pre-plans" of various construction steps. A pre-plan for pouring a floor slab, for example, would show materials needed, crafts involved, man-hours involved, methods to be followed and references applicable and specifications. For a big job, several dozen such pre-plans would be prepared. To support them, the planning engineers might make a methods study to determine the best way to perform an operation.

John R. Kiely of the Bechtel Corp. went into various aspects of on-the-job cost and schedule control. A schedule or cost unit, he said, must match a single unit of work and a single foreman or supervisor. Cost data for effective control should be prompt and reasonably accurate. Such controls must be used continually and should be administered with sound, experienced, construction judgment, Kiely said.

Grant P. Gordon of Guy F. Atkinson Co. pointed out that programming a major heavy construction job is substantially different from planning and schedule control on a building or industrial job.

Gordon said that programming a large dam job like The Dalles or McNary involves a large amount of skilled drudgery. He recommended that programs be started during the bid preparation period. And he listed the multiplicity of factors that make programming difficult. These include time limit, seasons, intermediate deadlines, available manpower and equipment and work area as well as such intangibles as possibility of floods, strikes, change orders or Korean-type police actions.

In concluding, Gordon commented that the construction industry is in a period of transition. More engineers are being employed by contractors and fewer, in proportion, by government agencies.

In discussing scientific management in heavy-construction, Lyman Wilbur of Morrison-Knudsen Co., Inc., pointed out the importance of management organization. His company is successful, Wilbur said, because responsibility is delegated to the lowest possible level. This is accomplished by placing district and project managers in charge with broad powers of control along with assistance from headquarters.

• **Industrial techniques**—Although the construction people on the program provided most immediately useful information, the purpose and theory of the conference was embodied in a group of other speakers. These men dwelt on methods that could be used by the construction industry. And they spoke of schemes that are being applied, at least to a limited extent. For example, Theordore R. Tucker of Fluor Corp. told how his group made use of models. Scale reproductions are used for design and planning by Fluor and models are also used to guide construction operations. Large-scale photos of models are used by Fluor in place of plans for many construction operations.

Gunnar C. Carlson of the Proctor and Gamble Co. told of his firm's construction cost reduction program P&G spends some $30 million annually on construction. And they have worked with some of their contractors to apply industrial cost-saving methods to construction with remarkable results. The methods boil down to detailed advance planning with effective follow-up. Carlson said that a dollar spent on planning results in a construction saving for P&G of two and a half dollars.

Perhaps the most difficult pill to swallow in the entire conference was on a paper on operations research by Roger R. Crane of Touche, Niven, Bailey and Smart, certified public accountants of Detroit. Operations research is a scientific, semi-mathematical analysis of repetitive operations. Crane did not give examples of specific construction applications. The purpose of his presentation was to plant the thought in the minds of the construction people that such techniques might save money.

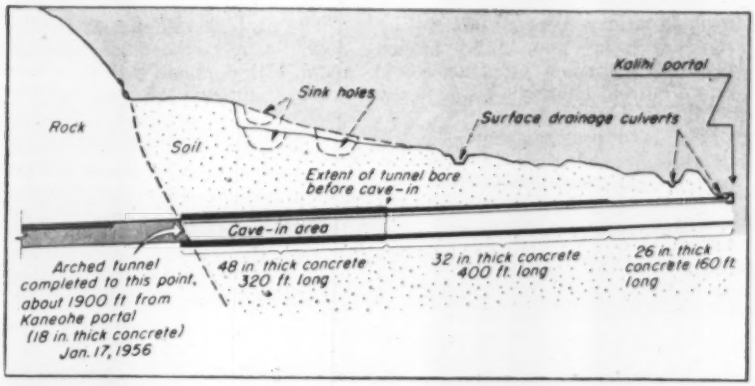
The conference was abundant with such idea plantings, and it was obvious that such ideas would bear fruit for large firms. The smaller contractors probably will have to wait and see before they can best apply these ideas to their particular operations.

Louisville to Get Only One Sewage Plant Despite Demands

Louisville, Ky., will have a single sewage treatment plant, as originally planned. This is in spite of officials' demands that a two-plant system be investigated—demands which followed a revised engineer's estimate that added $1.2 million to cost of interceptors for the one-plant scheme.

The single plant will cost about $6 million and its interceptors another $10 million. Consultants Metcalf & Eddy figure a two-plant system would total $14.3 million. But in spite of lower first cost of the two-plant plan, M&E's Frank A. Marston has convinced the city administration it should accept the single-plant scheme, withdraw its objections. Compared as to ultimate costs, including operation, the two-plant system loses its big dollar advantage.

A compelling factor—aside from costs—in the city's decision to go along with the original scheme is the State Water Pollution Commission's reluctance to brook any further delay. Louisville is the last remaining major city on the Ohio so slow in making progress in solving its pollution problem.


Kalihi portal
Sink holes
Surface drainage culverts
Rock
Soil
Extent of tunnel bore before cave-in
Cave-in area
Arched tunnel completed to this point, about 1900 ft from Kaneohe portal (18 in. thick concrete) Jan. 17, 1956
48 in. thick concrete 320 ft. long
32 in. thick concrete 400 ft. long
26 in. thick concrete 160 ft. long

FINAL 880 FEET of tunnel (at right of drawing) will have thicker lining.

Hawaiian Tunnel Will Get a New Start

Full-scale work on Honolulu's long-stalled Wilson Tunnel through Koolau Mountain is expected to get under way as soon as steel can be ordered to fit new specifications.

The contractor—E. E. Black, Ltd.—and Honolulu's City-County Board of Supervisors have approved terms of an agreement, including a new design calling for heavier steel and lining. But actual signing of the documents will be delayed a few days until a "shop plan" of the new design is approved by the Public Works Superintendent.

The 2,775-ft traffic tunnel—which will open a new route to Honolulu's growing suburbs on Windward Oahu—still has some 860 ft to be completed. Only limited progress has been made since an Aug. 14, 1954, cave-in killed five men and raised questions of responsibility, liability, and how future boring should proceed. But parties to the pact say the project now should be completed in 18 months provided steel fabricated to new design specifications can be delivered on time.

The old plan for 18-in. lining in the entire tunnel length has been amended so that thicker lining will be constructed in the remaining 860 ft of soft earth. Boring up to that point—through rock—was accomplished without serious accident. Through the cave-in area, the first 320 ft will have 48-in.-thick lining. The thickness will be reduced to 32 in. for the next 400 ft and to 26 in. for the final 160 ft.

• **Settlement terms**—The settlement is expected to cost the city from $100,000 to $350,000, and the contractor from $800,000 to $1 million. Here are other highlights of the plan:

• The contracting firm will assume the cost of re-excavating the 500 or so feet of tunnel filled by cave-ins.

• The city-county will assume the extra cost—about $350,000—for the new design decided upon for completion.

• Penalties for non-completion of the contract on the original schedule are waived by the city and new deadline requirements established.

• Both the city-county and the contractor's tunnel superintendents are to be replaced.

Steel ribs already purchased by the contractor will not fit the new specifications. So the city-county board has agreed to purchase them and presumably will use them in the rock section of a second, parallel tunnel that it hopes to build later.

One point not covered in the agreement is the matter of damage suits from families of workers killed in the cave-in. The contractor claims they are the city's liability. The city, in turn, as part of the agreement, specifically reserves the right to make claims against the contractor for indemnity. Otherwise, the two parties have agreed to release all claims against each other arising from the cave-ins.

• **Tunnel history**—Boring on the tunnel started on Jan. 8, 1954, and the break-through at that time was expected by July of the same year. Work progressed smoothly through the first 1,900 ft or so, which was through rock. But then it was slowed by cave-ins in the soft earth portion July 10, July 28 and August 14—the final one killing five men (ENR Aug. 19, 1954, p. 28).

Experts hired by the city blamed the cave-ins on the contractor's continued use of open face boring even after he had moved from the rock to the soft earth portions. The contractor said inadequate steel was to blame and asserted that the city's engineer would not approve heavier steel. Now the contractor has shifted to drift-type boring and the city has approved heavier steel and lining.

The original contract was for $4.5 million, but legal expenses and special engineering costs since the cave-ins have run to more than $100,000 for the city. Assumption of extra costs under the settlement are expected to push its total costs to above $5 million, not including any liability it may face from damage suits filed by survivors of the men killed.

Toll Road's Future

Traffic load spurs plans for Jersey 'Pike projects

The New Jersey Turnpike—which racked up new records in travel and revenue last year—is due for more face-lifting during 1956 to handle the traffic growth.

The annual report of the Turnpike Authority reveals that:

• Howard, Needles, Tammen & Bergendoff, New York City consulting engineers, have been engaged to plot an alignment for a northern extension of the turnpike. This would run from the present terminus at Ridgefield Park to the New York State line and connect with the Thruway (ENR Feb. 2, p. 26).

• A study already is in progress to determine feasibility of widening the turnpike from six to eight lanes on a 22-mi stretch between the Lincoln Tunnel exit and the Garden State Parkway at Woodbridge. Only last year the toll road was expanded from four to six lanes from the parkway exit south to Camden.

• Completion of two extensions is scheduled for the first half of 1956. The first—across Newark Bay to a point near the Holland Tunnel—will be opened as far as Bayonne on March 1, and in its entirety by June 1. The other stretch—running from the turnpike at Bordentown to the west bank of the Delaware River—will link the Jersey toll road to the Pennsylvania Turnpike. The second extension is scheduled for completion by June 1.

The authority's report noted that some 25,800,000 vehicles used the 118-mi turnpike in 1955, an increase of 5.4% over 1954. Tolls totaled $21.1 million, an increase of 1.8%. With income from other sources, revenues for 1955 added up to $23.9 million compared with $23.3 million in the previous year.

Accidents in 1955 numbered 675, equal to a rate of 71.6 for each 100-million miles of vehicle travel. This rate was about one-sixth the rate on New Jersey's public highways and an even lower fraction of the rate on U.S. highways as a whole. There were 26 turnpike fatalities in 1955, equaling a rate of 2.76 per 100 million miles, compared with an estimated 6.5 rate for the U. S. as a whole.

Lincoln Tunnel Plans

Guide drift will be sealed, shield will finish the job

Abandoning attempts to speed their operations by construction of a guide drift from the Manhattan side of the Hudson river, contractors on the Port of New York Authority's $100-million third tube of the Lincoln Tunnel will complete the bore as a shield-driven operation.

Officials of the joint venture of Mason-Johnson-MacLean, contractors on the under-river section of the tunnel project, announced that decision last week, after considering results of studies of a break in a pilot tunnel that caused flooding and sensational headlines—but little actual damage—a week previously (ENR Feb. 2, p. 22).

Unlike many tunnels of its type previously built, the third tube is being driven from one heading only—from the west, or New Jersey, side. At present, the 73-ft dia. shield has reached the bulkhead line on the Manhattan side of the river, and is within a few hundred feet from the bottom of a ventilation building where the shield-driven tunnel will join an already-constructed tunnel that will bring traffic up to street level in midtown New York City.

As a means of speeding up the work, the contractors had started drilling a 8-ft dia drift from the ventilator shaft eastward to meet the shield. In this drift, it was planned to cast a concrete cradle to receive the shield.

In a joint announcement, PNYA and the contractors said that the drift would be abandoned, sealed with concrete and the shield driven through under air to its junction with the existing land tunnel.

Delaware Picks First Route In Approach-Road Program

Delaware's Interstate Highway Division has approved the first stage of a $110-million highway construction plan to be financed from Memorial Bridge tolls.

The initial phase—to cost from $6.4 million to $7.5 million—will be a four to six-lane limited-access highway running from Farnhurst to State Road, south of Wilmington. The overall program will provide aproach roads to connect the bridge with the Chesapeake Bay Bridge and other superhighways in Maryland and Pennsylvania (ENR Oct. 13, 1955, p. 80).

The division also tentatively approved plans for the $75-million refinancing program for Memorial Bridge. Bonding experts have recommended retirement of all present outstanding bonds—some $36.5 million worth. Then a new indenture would be written and a new bond issue placed on the market.

The road program, however, still depends on whether Congress approves a bill authorizing refinancing of the bridge and its continuation as a pay facility. The bridge originally was scheduled to become free by 1978, when tolls were expected to pay off the debt. But it has attracted such a heavy volume of traffic since it opened in 1951 that the $48-million bond issue could be paid off by 1960.

Outdoor Elevator

Hydraulic ram will raise enclosed cab 12 stories

Work is about 60% complete on a hydraulic-ram elevator being added to the El Cortez Hotel, San Diego, Calif., that will travel 12 stories in the open.

The cab, with a 20,000-lb capacity will accommodate 16 persons. It is enclosed with ¼-in.-thick transparent plastic and has a stainless steel platform. Aluminum rails will be installed to a height of 42 in. in the cab.

The elevator will stop at the first-floor lobby, second-floor banquet room, 12th floor and 15th floor. After emerging through the roof of the banquet room, it will travel in the open, guided by two stainless steel rails.

Four motors, totaling 150 hp, driving four pumps in series, will operate the hydraulic mechanism. They will cut in successively as the load becomes greater, until all four are in operation when the lift is near the top of the column.

A 170-ft shaft was sunk to accommodate the 12½-in. dia steel ram, which descends 165 ft.

A triangular stay, affixed to the rails, will rise at half the speed of the cab, to provide lateral stability by cutting the unsupported column height in half.

Paderewski, Mitchell & Dean are the architects for the project, and Tom Atkinson is the engineer. Arnold Hunsberger of the Elevator Electric Co., which holds the $80,000 construction contract, collaborated on the design. The architects estimate the overall cost of the project at $100,000, which they say is much less than for a conventional elevator, which would have meant loss of rentable space, strengthening of the building and rerouting stairways.

The Moles Honor Two "Greats"

What has come to be regarded as the top honor that a construction man can receive at the hands of his fellow workers went to Harvey Slocum and Howard L. King at this year's Award Dinner of the Moles in New York last week. From left to right: Charles D. Riddle, vice president, Walsh Construction Co., is handing Mr. Slocum his "non-member" award as a great construction boss on dams; and Mr. King is receiving his "member" award as a great tunnel builder from Miles Kilmer, vice president, Mason & Hangar Co. Mr. Slocum is currently in charge of construction of Bhakra Dam in India, and Mr. King, as chief engineer of Mason & Hangar, is directing work on the Lincoln Tunnel third tube at New York.

Announcing...

THE NEW ATHEY PR-15 REAR DUMP TRAILER

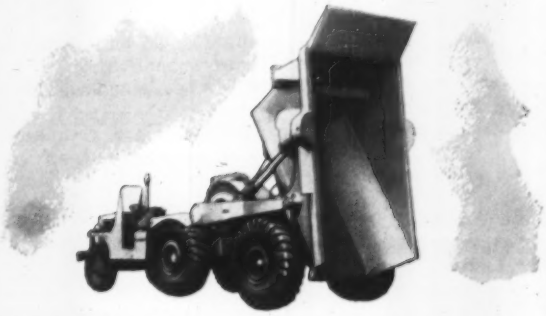
SPEEDS TO 31.3 MPH provide high production at the lowest possible cost. No idle shovels or wasted time. More loads per hour, more material hauled per day.

15.6 CU. YDS. (22 TON) CAPACITY — matched design of the tractor and trailer assures top performance — utilizes full tractor capabilities.

FAST 12 SECOND DUMPING keeps units producing — earning more money. Body raises 60° to dump any load quickly and surely. Spreading is easy with positive operator control of the dumping angle. High speed pump flow control valve and double-acting cylinders all team up to give maximum efficiency.

TURNS IN 37' — facilitates work in narrow cuts and speeds spotting under shovel. Keeps cycle on a profitable basis, eliminates high cost maneuvering.

POWERED BY CAT 186 HP DW15 TRACTOR and interchangeable with the No. 15 Cat Scraper. Tires on the tractor and trailer are interchangeable. Trailer tires, wheels and brake drums are also interchangeable with the No. 15 Scraper for greater economy.



HYDRAULICALLY-CONTROLLED THROUGHOUT — positive, dependable. One lever for dumping. No complicated cable arrangements or downtime for costly cable replacement.

EXCELLENT WEIGHT DISTRIBUTION with 37% on the tractor drive wheels. Traction assured in the toughest footing with big 21:00-25, 24 ply rock-type tires on the trailer and tractor drive wheels.

RUGGED AND DEPENDABLE, made of premium quality steels by specialists in the tractor-trailer field. Over 32 years of know-how and field experience stand behind the PR15.

The PR15-DW15 team is designed for high production at the lowest cost. It has many advantages over other types of hauling units. The wide mouthed body is an easy target. A low loading height increases shovel efficiency. The low center of gravity permits maximum speeds on the haul and around tight turns.

Safety is built in with big powerful brakes. Positive operator control on the edge of the fill with independent braking of tractor drive and trailer wheels. Handling is easy and sure.

All these features mean more profit on every job where the PR15-DW15 team is working — loading more, rolling faster, dumping quicker. Check your Athey-Caterpillar Dealer for all the facts. Find out how you can cut your hauling cost with the new PR15. *Athey Products Corporation, 5631 West 65th Street, Chicago 38, Illinois.*

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Michigan Roads

Arterials, new turnpike system in the spotlight

Blueprints for a new $600-million turnpike system and for $304.5 million worth of trunkline highway construction have been placed before Michigan's legislature.

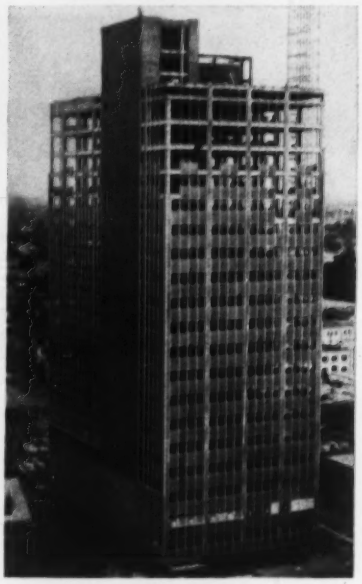
The arterial-program—already scheduled—calls for construction of 455 mi of four-lane divided highway during the next two years. The turnpike system—still in planning stages—would provide 500 mi of toll expressways from the Ohio line to Mackinac and from Detroit to Chicago. It would include:

- A 33-mi link between Rockwood and the Ohio Turnpike.
- A 113-mi road from Saginaw to Rockwood.
- A 198-mi road from Saginaw north to the Straits of Mackinac.
- A 170-mi road from Detroit to Chicago via Benton Harbor and New Buffalo.

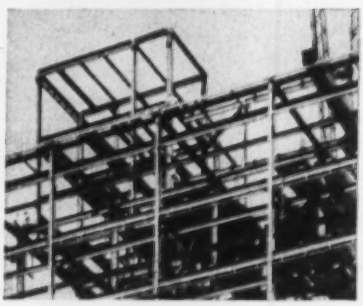
The Michigan Turnpike Authority has asked the legislature to put a $300-million state-backed bond issue before voters in November to help finance construction of the toll roads. If the bond issue carries, Rockwood-Saginaw construction would start immediately, and final traffic and engineering studies would be ordered for Saginaw to Macinac and Detroit to Chicago. According to the plan, the whole system could be put in operation in five years.

Meanwhile, Gov. G. Mennen Williams has urged the legislature to wipe out bonding restrictions that limit the amount of gasoline tax revenues the state can pledge for repayment of construction bonds. With the additional bonding authority, the governor said there would be enough money to build an additional 400 mi of arterial highways.

Gov. Williams pointed out to the lawmakers that Michigan's highway needs have been growing at a rate in excess of all past estimates. In a 1947 study it was estimated that by 1970 highway traffic would reach a total of 25 billion vehicles miles a year. That forecast was exceeded in 1955 with more than 29 billion vehicle miles.



Blue Aluminum Walls . . .



. . . Cover Welded Frame

Exterior of the 20-story Henry C. Beck Building in Shreveport, La., consists of blue-colored aluminum panels, set in aluminum mullions extending the full height of the skyscraper, and continuous bands of windows in each story.

All connections in the skyscraper were welded.

Neild & Somdal are the architects. Henry C. Beck Co. is the general contractor. (Photos courtesy Lincoln Electric Co.)

Special Terminal Planned To Serve Seagoing Trailers

Port of San Francisco engineers have prepared preliminary plans for a $750,000 terminal to serve trailer ships.

The terminal—which would be the first such facility at a West Coast port—would accommodate trailer-carrying vessels up to 550 ft long. The terminal would include two concrete ramps supported on piles to serve both decks of double-deck stern-loading ships.

First petition for a certificate to operate seagoing piggyback service on the West Coast has been filed with the California State Public Utilities Commission by Pacific Trailer Ships, Inc., San Francisco. The company plans a San Francisco-Los Angeles run.

NEWEST PAYLOADER® MODEL sets the pace for a bomber base

Here is the starting point of Peter Kiewit Sons "production line" for concrete placing at a large bomber base — a Hough model HH "PAYLOADER" tractor-shovel feeding a belt conveyor with sand and gravel from adjoining stockpiles. The task of the "PAYLOADER" is a crucial one, because failure at this point would bring the entire concrete-placing operation to a standstill.

Peter Kiewit Sons, one of the largest and most progressive of heavy contractors, have been using "PAYLOADER" tractor-shovels for years on their contracts all over the United States. You too, can depend on the proven performance of "PAYLOADER" tractor-shovels and on the large and reliable Distributor organization that sells and services them, both at home and abroad.

PAYLOADER®
MANUFACTURED BY
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SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

This model HH is one of three completely-new 4-wheel-drive "PAYLOADER" tractor-shovels. They all have a sensational new kind of bucket arm design that provides 40 degrees of bucket tip-back at ground level, powerful pry-out action plus unusual safety, stability and visibility factors.

THE FRANK G. HOUGH CO.
772 Sunnyside Ave., Libertyville, Ill.

Send data on new 4-wheel drive units

- ☐ Model HU—1 cu. yd.
- ☐ Model HH—1½ cu. yd.
- ☐ Model HO—2 cu. yd.

☐ Smaller "PAYLOADER" units

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To Specify accurate sizing control specify.. GILSON!

The GILSON Mechanical Testing Screen is *fast, accurate,* and *convenient* for size-testing crushed stone, gravel, slag, coal, ores, and similar materials.

When you specify GILSON Testing, you *cut out guesswork and error* in meeting sizing requirements — *prevent costly foul-ups* and delays on the job.

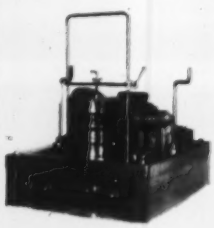
The GILSON Screen handles up to one cubic foot of sample — makes two to seven separations simultaneously, in *five minutes or less.*

About GILSON Maintenance — 87.1% of GILSON owners report little or no maintenance for at least three years of hard service! (Some up to *fourteen* years.)

Here's why GILSON is your answer:

1. Makes tests quickly and accurately
2. Two to seven separations simultaneously
3. Screen trays independently removable
4. Trays balanced to same tare weight
5. Visible separation to refusal
6. Few moving parts
7. Sturdy construction
8. Size range 4" to 200-mesh

A sand attachment for handling 8-inch sieves is optional equipment.



For research projects, too — the GILSON Screen is the answer to moderate-scale mass separation jobs.

What are your requirements? Write for information and quotation.

GILSON SCREEN CO. MALINTA, OHIO

Water Reclamation

Little action predicted at California conference

Little early action on reclamation of water in California was foreseen by many of the West's top water engineers gathered for a conference in late January at Berkeley.

Harvey O. Banks, acting California State Engineer, said waste water reclamation will have a place in California's Master Water Plan, but just what that place is, is not definite. Yet the plan is to be presented to the state legislature by June.

Hinting at the plan's contents, Banks further stated that California's total water resources appear adequate to meet ultimate foreseeable needs and that reclamation of waste waters will be necessary only to provide for contingencies.

Spokesman for the Metropolitan Water District of Southern California, C. C. Elder held that while sewage reclamation is the district's most important reserve, with its Colorado River Aqueduct operating at only 33% of capacity, the district couldn't see asking taxpayers to pay for waste water reclamation. And the aqueduct won't reach full capacity for another 20 years.

Industrial consultant, William J. O'Connell, Jr., attempted to take industry neatly out of the picture by stating that industry couldn't pioneer waste water reclamation since it would be usurping the function of public districts. He added that industry couldn't risk marginal investments for conservation.

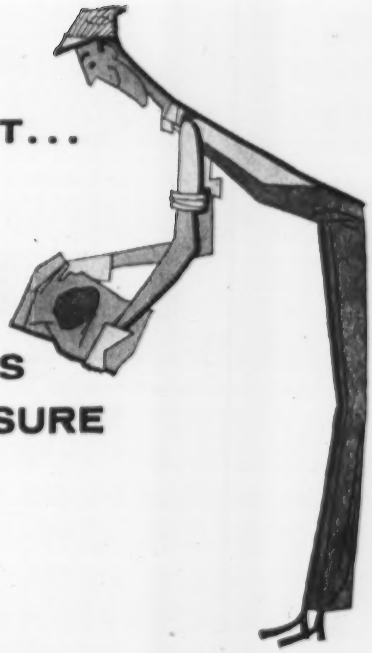
Balancing the discouraging talk were many statements calling for agencies concerned to re-examine their attitudes and to get over their "inherited" reluctance to think in terms of waste water reclamation projects.

An interesting sidelight was California Assemblyman Francis C. Lindsay's call for immediate action on some water supply projects. He was impatient with bond issues—having little faith in them in view of the state's many conflicting interests—and would tap a state kitty of some $300 million now in the bank, with more coming in from oil royalties. Lindsay is chairman of the Assembly Committee on Conservation, Planning and Public Works.

The conference was sponsored by the Sanitary Engineering Research Laboratory and the Division of Civil Engineering of the University of California.

Prof. Harold B. Gotaas, director of the research laboratory, presided at the conference.

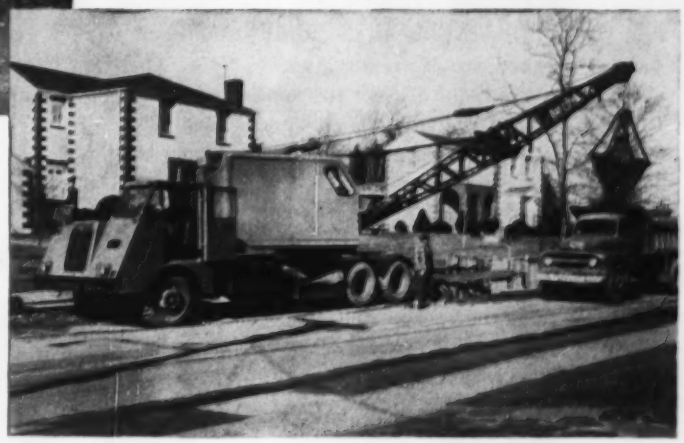
HERE'S THE LONG AND THE SHORT OF IT...



BAY CITY CRANEMOBILE

MAKES ALL LIFTS EASY, FAST, AND SURE

Regardless of boom length or type of job, contractors find that the BAY CITY CraneMobile has the strength and speed and dependability to make all lifts easier. This highly mobile, rubber-tired crane is available in a number of sizes with capacities up to 25 tons and a selection of carriers—designed and built by BAY CITY—to meet job requirements. The CraneMobile boasts a big power plant, a long wheel base, and heavy duty construction throughout. Even the longest boom can be raised all the way from the horizontal without the help of another crane. Write for CraneMobile Catalog, today.



Advantages of the BAY CITY CraneMobile:

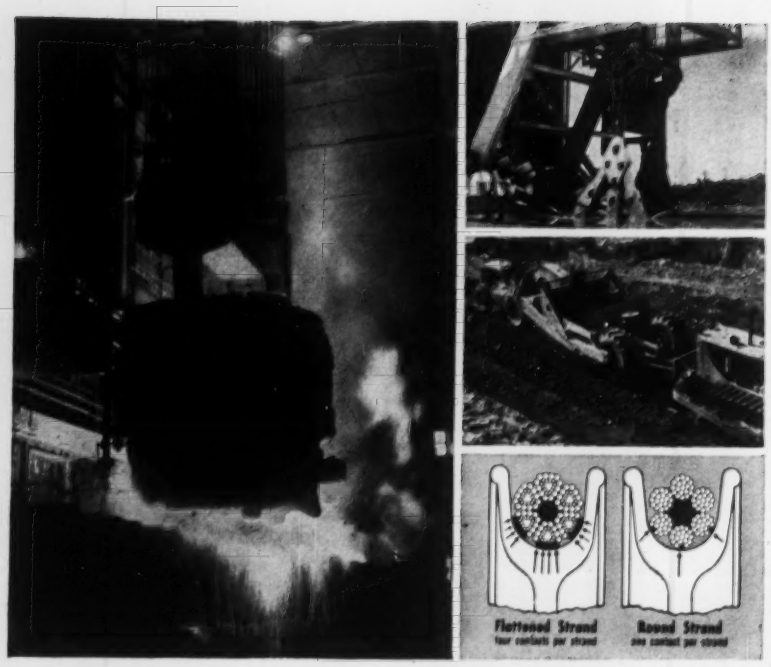
- An independent worm boom hoist that raises and lowers boom or boom and load—only under power—through reversing clutches.
- Deep-section, pin-connected boom for long reach and easy changes. Boom hoisting cable does not need changing.
- Collapsible Hi-gantry 11′-8″ in height.
- Controlled load lowering of maximum capacity loads at approximately one inch per second when using six parts of line.

257

BAY CITY SHOVELS INC. • BAY CITY, MICHIGAN

BAY CITY

SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS



How to handle the tough jobs with Hercules Flattened Strand wire rope

When you think you need a super-rope, check Hercules Flattened Strand. This is the wire rope that packs in 10% more steel than round strand rope, making it 10% stronger and safer. It wears longer and more evenly—reduces sheave wear, too.

The 10% extra strength over round strand rope is sometimes the difference between the possible and the impossible. Hercules Flattened Strand frequently does the tough jobs which would otherwise require larger size rope—and without the bother and expense of changing sheaves and drums. The extra strength is useful, too, when shock loading is involved. Saves rope—and money.

If you think that Hercules Flattened Strand wire rope may solve a problem, talk it over first with your Leschen man. He can be reached through your nearby Leschen distributor. His advice is based on the best possible authority—Leschen's long experience and engineering research—the longest in the industry. And with Leschen wire rope you are assured of higher-than-rated quality.

If you can use Hercules Flattened Strand rope you'll be money ahead. See about it soon.

Depend on Leschen's higher-than-rated quality.

LESCHEN WIRE ROPE DIVISION
H. K. PORTER COMPANY, INC.
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HERCULES Red-Strand® WIRE ROPE

Percy Vermilya Dies

Vermilya-Brown president retired only last month

Percy S. Vermilya, 77, died Jan. 29, a few days following his retirement as president of the New York City building firm of Vermilya-Brown.

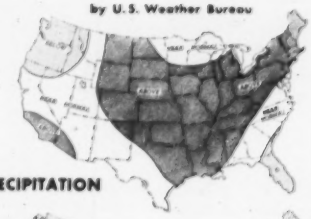
Named chairman of the board upon his retirement, he had started with V-B's predecessor firm, Marc Eidlitz & Son, in 1897. The Eidlitz concern, which was founded in 1854 and built New York City's Metropolitan Museum in 1884, with its successor organization built or altered a good many of the financial institutions that have become landmarks in the Wall Street district. The firm has had over 200 contracts for banks alone.

In recent years, much of the firm's work has been in hospital, laboratory and department store construction and such institutional buildings as churches and museums.

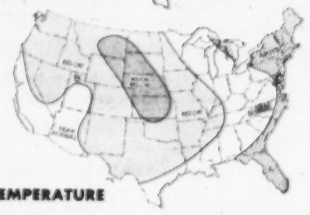
True to the tradition of his organization as a "custom" builder, Vermilya resisted participation in competitive bidding until World War II, when asked to bid on defense contracts.

30-DAY WEATHER OUTLOOK

by U.S. Weather Bureau



PRECIPITATION



TEMPERATURE

The Weather Bureau's outlook for February calls for temperatures to average below seasonal normals in most of the country west of the Mississippi, with greatest departures in the Great Plains. In the eastern third of the nation temperatures are expected to average near normal, except above the Northeast and south Atlantic states.

Precipitation is predicted to be subnormal in the Pacific Northwest and in the Southeast. In the remainder of the country above normal amounts are indicated.

Skyscraper Clad in Stainless Steel—

Miracle at Grand Central

Socony Mobil Building, though overshadowed by its skyscraper neighbors, rises to a height of 572 ft above street level.

Only a little more than a year ago, a deep excavation covered a whole city block, a stone's throw from New York's Grand Central Terminal on 42nd St. Now, the Socony Mobil Building soars upward 45 stories there.

Heavy traffic, huge working population, jam-packed skyscrapers make the area around 42nd St. one of the most congested pieces of real estate in the world. Building anything there seems impossible; erecting another massive skyscraper in less than two years is practically a miracle.

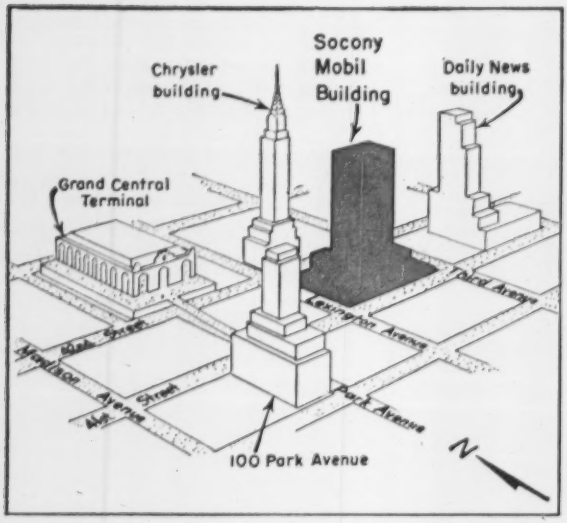
Congestion may have been bad when the structure's giant neighbors —the 77-story Chrysler Building, 56-story Chanin Building and 36-story Daily News Building—were erected more than 25 years ago, but conditions are much worse today. Construction equipment cannot be permitted to tie up traffic. Sidewalks have to be kept clear to permit heavy pedestrian travel. Existing subway connections have to be kept open. In short, the only elbow room available, the only place for storage of materials and equipment is inside the lot lines.

By solving the materials-handling problem, Turner Construction Co., the general contractor, succeeded in maintaining a fast construction schedule for this $45 million project. It will be completed this spring.

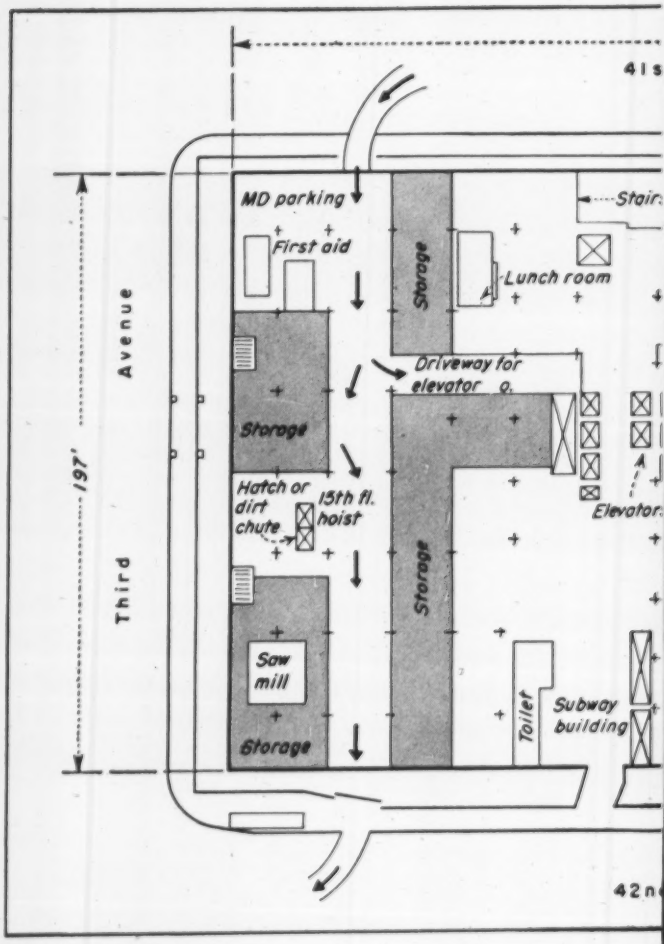
• **In the limelight**—Formerly known as the Socony-Vacuum Building, the new structure has been attracting worldwide attention on several accounts (ENR Dec. 23, 1954, p. 19): It will be the world's largest metal-clad office building (400,000 sq ft of stainless steel); the biggest commercial structure to be completely air conditioned initially; the sixth largest in floor area (1,600,000 sq ft). It will have more operatorless elevators than any other building. And it will be one of the first skyscrapers with a high-voltage electrical distribution system.

The three-story base of the new office building covers the full 420x197-ft site between 41st and 42nd St., from Lexington to Third Ave. Flanked by two 14-story sections, a central tower, 200x104 ft in plan, rises to the full 45-story height, including three stories at the top for air-conditioning and other mechanical equipment. With story heights of about 12 ft, it extends 572 ft above street level.

(Continued on page 34)



Famous skyscrapers form a cordon around the 45-story Socony Mobil Building, newest addition to New York's Grand Central area.



First floor was used during construction for temporary storage of materials. Unable to unload in the city streets, trucks were driven directly into the building, followed set routes to expedite deliveries, as indicated by arrows.

. . . Miracle at Grand Central (continued)

New Idea in Air Conditioning

Turbo-compressors and absorption equipment are teamed up in the Socony Mobil Building to cut air-conditioning costs. The system, designed by Jaros, Baum & Bolles, mechanical engineers, New York City, not only reduced installation costs, but saved rentable space and is expected to lower operating costs.

Installation cost averages $4.30 per sq ft for the 1,250,000 sq ft of rentable floor area. Employing steam purchased from Consolidated Edison Co., the system will both heat and cool, as needed. For cooling, it has a 3,900-ton capacity.

Equipment is concentrated in the sub-basement, on mechanical floors at the top of the building and on the 8th floor.

Three steam-driven turbo-compressor units with a total capacity of 2,500 tons—two with 1,000-ton capacity and one with 500-ton, to operate at off-peak hours—were installed in the sub-basement. There, also, are pumps for chilled water and condensing water.

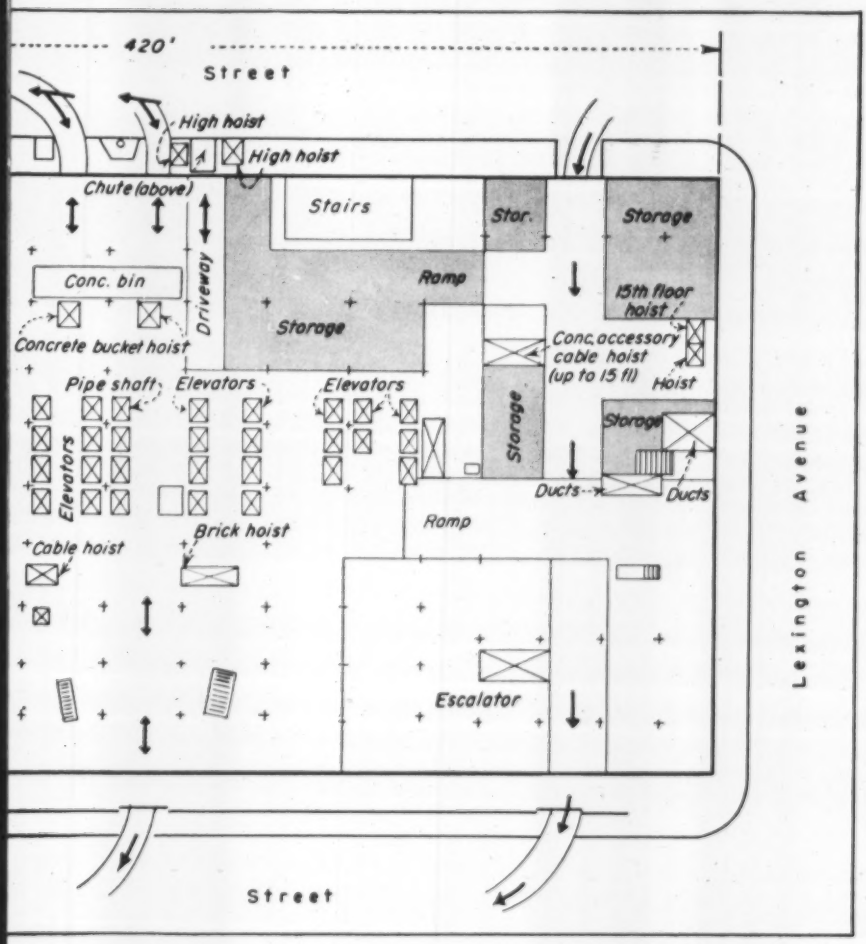
On the upper mechanical floors are three absorption-type refrigeration machines, with a total capacity of 1,400 tons, chilled and condensing water pumps and fans equipped with electrostatic filters. Operating without moving parts, the absorption equipment evaporates moisture to chill water, the moisture then being absorbed by a salt—lithium bromide—which later is regenerated with steam. (The cycle is similar to that employed in household gas refrigerators.) Chilled water is circulated through the building to cool the air.

The sub-basement equipment conditions the first 14 stories. The apparatus at the top of the building takes care of the 15th through 42nd floors. Fan rooms on the 8th floor serve the lower section. Placing of equipment in this way on three levels reduced piping costs substantially.

Another way in which the system cuts costs is through double use of steam. After passing through one of the turbo-compressors, exhausted steam will be piped to the roof to energize the absorption equipment.

The building is divided into two individually controlled zones—interior and exterior—both supplied with high-velocity air and provided with a means of mixing warm and cool air. Air for the exterior zone is piped to under-window units, where it is passed over cooling or heating coils and mixed with some room air. Warm and cool air for the interior zone is distributed through separate vertical ducts to the various floors, where they are combined in desired proportions. Ducts 12 in. in diameter deliver the air to a high-pressure damper and acoustic box at about the center of each bay, above the ceiling. Four fire-resistant flexible hoses then take the air to ceiling diffusers, where it is discharged at low velocity.

Kerby Saunders Inc., New York City, was the heating, ventilating and air conditioning contractor. Carrier Corp. supplied the air-conditioning equipment.



• **Fast work on steel erection**—The American Bridge Division, U.S. Steel Corp., erected the 20,700-ton steel frame in just under nine months. Setting a fast pace from the start, the erectors set steel for two stories every four days—750 tons per week in the early stages.

As each truckload arrived at the site, the steel was immediately removed from the truck.

Until the fourth-floor setback was reached, the structural members were placed by eight derricks, which picked them up directly from the trucks. Between the fourth and fourteenth floors, six derricks erected the steel. And in the upper stories, only two derricks were needed.

One derrick, however, remained at the fourth floor, to relay the steel. Some members could be stored at this setback level until needed.

Columns were delivered in two-story lengths, with connections for wind girders shop riveted in place. These connections were of two types: (1) tee sections (made from wide-flange beams) on top and bottom girder flanges for heavier connections; (2) flange angles for lighter conections.

Riveting kept up with the derricks. Floor concreting stayed about 8 floors below the top steel.

The floors are 4 to 5½-in.-thick grit-crete—made with grit aggregate and foamed with an aluminum powder—and 4-in.-thick cinder-concrete fill with cement finish.

• **How materials were handled** — As soon as the first floor attained sufficient strength to sustain traffic and before the fill was placed, material supply trucks were permitted to drive into the building and unload. As shown on an accompanying sketch, truck routes were laid out on this floor, and various portions of the floor were assigned to subcontractors for temporary storage. The routing takes into account the one-way traffic on 41st St.

Maximum loading on the floor was limited to 25-ton trucks. None of the loads was great enough to necessitate wood-plank protection for the floor. The brick-storage section was the only area planked over, and that was done to level it off.

To meet masonry requirements, 30 loads of concrete and 15 to 20 loads of brick had to be supplied daily. In addition, 50 truck trailers made daily delivery of other materials.

To make the most of the limited space available, Turner required 24 hours notice of materials to be delivered. Also, a time limit of 24 hours was set for first-floor storage.

As a corollary, distribution of materials to the various floors had to be scheduled precisely. Turner made available to the subcontractors four hoists, in addition to those used for concrete and brick supplies. Extended as the steel frame of the building rose, the four hoists generally were booked one week in advance. Heavy loads, however, were raised with a Chicago boom, rather than on a hoist.

A hatch opening was left at one end of the first floor to permit lowering machinery into the basement and sub-basement.

Employment of the hoists at full capacity was facilitated—and safety assured—through the use of portable telephone signal equipment. Men at shipping and receiving ends of the hoists plugged into the 7-wire system, which also connected them with the hoisting engineer's station. No one but these bell-ringers were permitted to control the operation of the hoists, and nobody was allowed to ride the hoists.

Cabs had 14-ft headroom to accommodate one-story-high metal panels for the building exterior.

Waste was disposed of through a tubular steel chute with openings at each floor. The chute discharged into a hopper above the first floor, under which trucks backed to receive the waste.

Masonry mortar was delivered to a storage bin and then to a mixer at first-floor level. The mix was dumped into a metal pan, which was picked up by a hand buggy with hydraulic lift and wheeled into a hoist. Raised to the working level, the pan was removed from the hoist by a similar buggy and delivered to the working area.

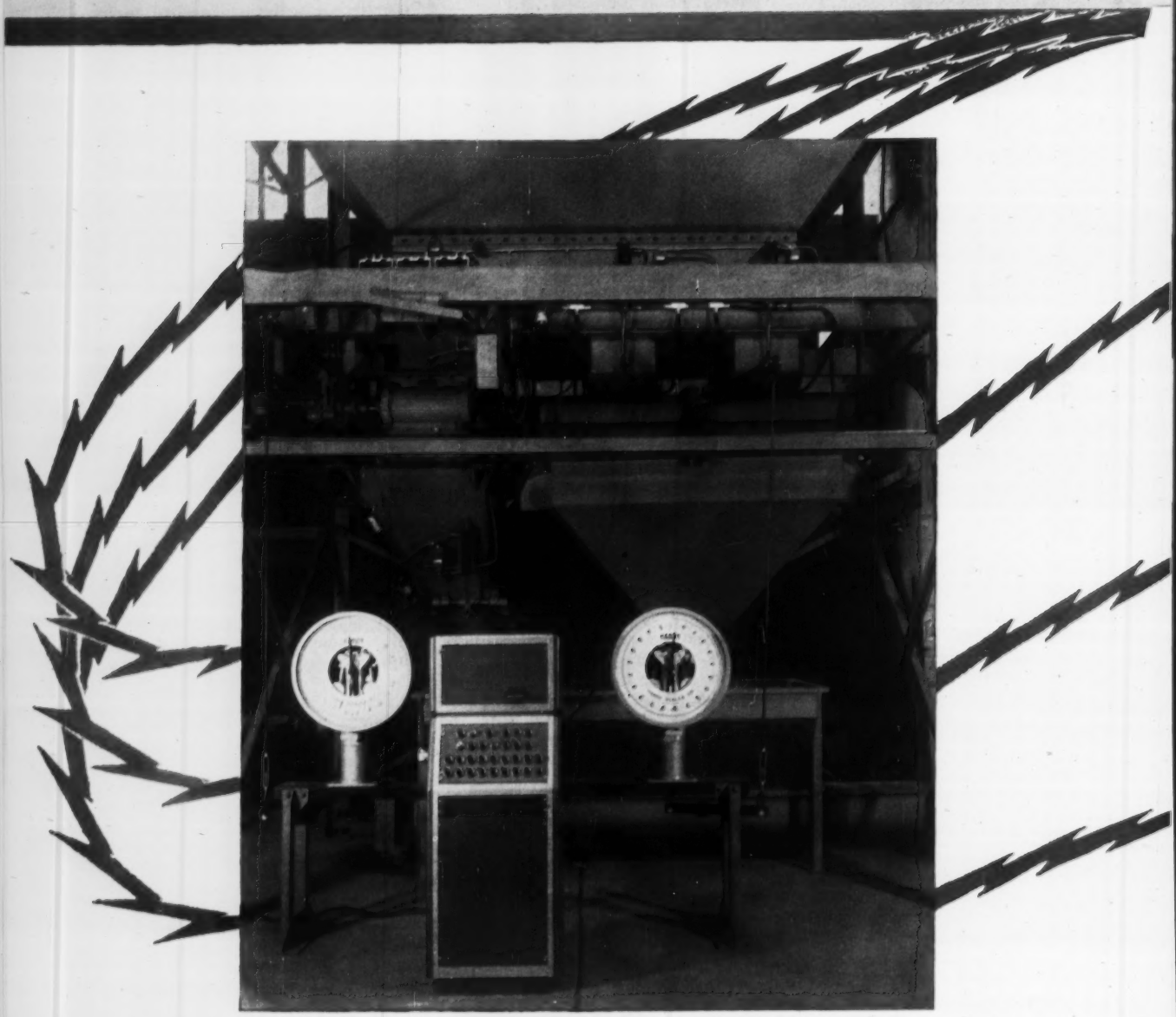
Brick and block also were moved around with the aid of hydraulic lifters.

Material for the concrete floors was dumped into hoppers in the basement. Mixed in 1-cu yd electrically driven equipment, the concrete was fed to a bucket hoist for delivery to the upper areas.

Personnel elevators were installed to the 25th floor about one month after 28th-floor steel was riveted. Two elevators were assigned to low-rise operation (11th floor) and two to high-rise. And as soon as the steel frame was topped out and riveted, service was extended to the top of the building.

(*Continued on page 38*)

It's Here! PRACTICAL ELECTRONIC PUNCH-CARD



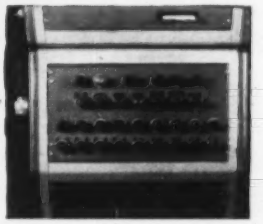
Here's the plant the industry has talked about since the word "automation" was injected into our language. A batching plant that completes all batching operations automatically with a speed and precision only possible with full electronic control. **It is the first punch card electronically operated weighing systems controlled through dial scales accepted by the Bureau of Standards.** It selects any number of materials (automatically compensating for moisture where desired) weighs them out with unparalleled speed to an accuracy that conforms exactly to mix specified and leaves a complete record of the entire process — all in less time than it takes to read this paragraph.

A roomful of electronic controls? Not on your life! That's the beauty of the new Helco-matic Batchmaster System. The entire control system has been simplified and boiled down until it is no larger than a standard filing cabinet. What's more, the design is unitized, functional parts are grouped for the quick and easy replacement. Downtime is eliminated with this system. An entire electronic "drawer" can be disconnected and replaced with a spare in a matter of seconds.

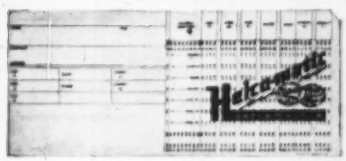
Here's the plant of tomorrow. Years ahead in design and operation, it can save you dollars every way you turn. An office girl can operate it. The cards can be used to keep a running inventory of your materials and to simplify your bookkeeping.

HELCO-MATIC BATCHING

UNLIMITED BATCH SELECTIONS



There are more than 8,000,000 batch combinations—each selected instantaneously. It has automatic and integrated moisture compensation.

AUTOMATIC INVENTORY — ACCOUNTING

Cards can be used to keep your books, simplify accounting, billing, inventory control, cost analysis, etc., with a reduced office staff.

COMPACT FILING CABINET SIZE

No electronic nightmare, but a small filing cabinet-size unit that can be placed any distance from weigh batchers.

UNITIZED FOR EASY MAINTENANCE

Electronic System is grouped and sectionalized for ease of maintenance.

LOWEST COST AUTOMATIC

With all its exclusive features, the new Helco-matic Batchmaster actually costs less than any other plant of its kind.

MEETS ALL SPECIFICATIONS

Entire system is com... federal and sta...

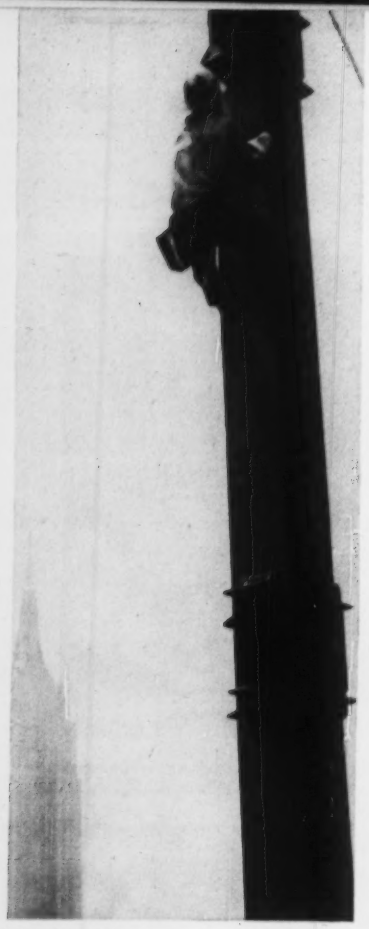
SEE IT AT THE SHOW!

You can see a full scale working unit of the revolutionary new Helco-matic Batchmaster at the Ready Mix Show in Chicago on Feb. 13, 14, 15 and 16. Make a note to stop by Booths 285, 286, 287 and 288, or contact The Heltzel Steel Form and Iron Co., 1750 Thomas Rd., Warren, Ohio for complete details.

NATURALLY IT'S

HELTZEL STEEL FORM AND IRON COMPANY

63000 THOMAS ROAD, WARREN, OHIO



Steel columns erected in two-story lengths, came with wind connections in place. (Empire State Building is in the background.)

Wind connections to take large stresses consisted of T-sections on top and bottom flanges of girders, with a stiffened seat.

Structural steel for the upper part of the building was hoisted by a relay derrick to the fourth-floor setback, where it was picked up by derricks atop the frame.

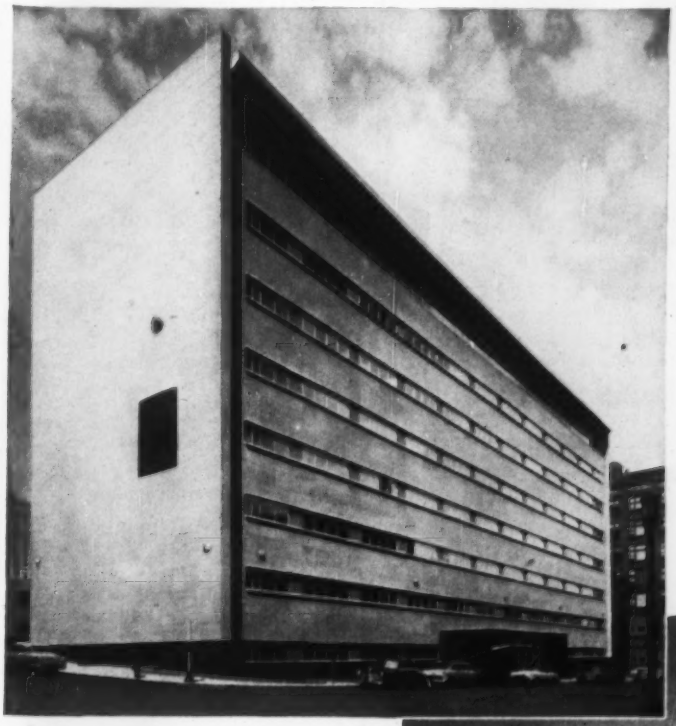
• **Stainless exterior**—After the floors were concreted, the stainless steel exterior was attached. About 7,000 story-high panels, were required, windows and solid panels being placed in alternate vertical strips. The installation called for 375 tons of 0.037-in.-thick 18-8 chromium-nickel steel (Type 302).

To meet building-code requirements, the panels were backed up with 4 in. of solid cinder block.

Panels were stamped with a decorative geometric pattern, and the exterior face was given a "special 2D sheet finish." This designates stainless steel that has been annealed, pickled in acid, then lightly cold rolled to give a moderately bright, uniform surface. To protect the finish, the panels were delivered in flat crates, with the outer face covered with paper.

The panels are roughly 4 to 5 ft wide and 12 ft high. The windowless

ON THE NEWS FRONT WITH STRUCTURAL STEEL



New Office in St. Paul

The Minnesota Mutual Life Insurance Company's new office building on Victory Square in St. Paul is a handsome 8-story building of native Minnesota stone topping a black granite base. A particularly striking lobby features large areas of glass and a variety of woods. A colorful mural, depicting various episodes in the state's history, is a main feature of the lobby. More than 1000 tons of Bethlehem Structural Shapes were used in building the new office, which contains about 119,000 sq ft of usable floor space.

Architects: Ellerbe and Company; *General Contractor:* Wm. Baumeister Construction Company; *Steel Fabricator:* St. Paul Structural Steel Company. All are St. Paul firms.

Physical Education Center

Two related units, a gymnasium and a field house, comprise the Physical Education Center of coeducational Northeastern University, Boston. The main gymnasium measures 110 ft by 156 ft with 25 ft headroom. The attached field house has cinder running and sprinting tracks under a clear span of 159 ft. Both of the Physical Education Center's units were built on a framework of Bethlehem Structural Shapes.

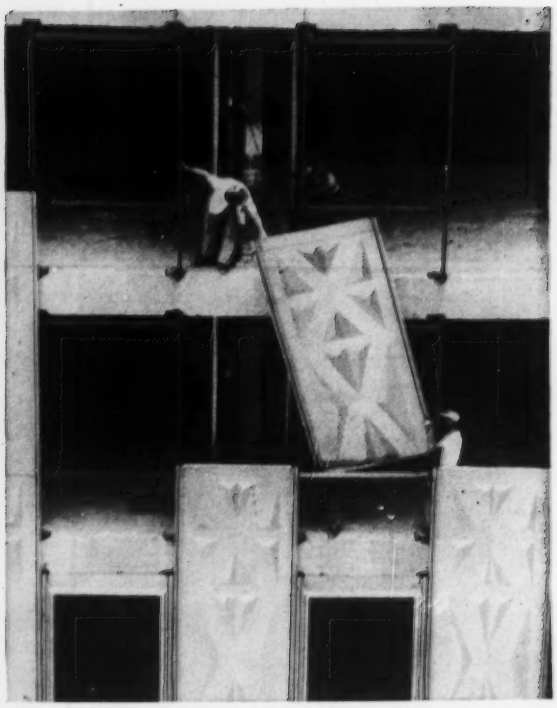
Architects: Shepley, Bulfinch, Richardson and Abbott, Boston; *Steel Fabricator:* Groisser and Shlager Iron Works, Somerville, Mass.; *Steel Erector:* New England Erecting Co., Boston.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

1. SECONDARY FRAMING to support metal wall panels was bolted to brackets welded to the spandrel beams.



2. STORY-HIGH PANELS—with and without windows—were lowered into place from the floor above. (Conduits next to the steel columns will carry high-velocity air for air conditioning.)

ones are stiffened on the inside face by four horizontal Z-bars and one hat-shaped stiffener.

The walls were placed from the inside of the building, eliminating the need for scaffolding. To support the metal panels, secondary steel framing was attached to brackets welded to top and bottom flanges of the spandrel beams. In each bay, the framing consisted of four vertical channels, extending from the floor to the underside of the spandrel beam above, each pair horizontally braced near the top and window sill.

Lowered from the story above, the wall panels were bolted to this framing through vertical slotted holes in steel clips that were fastened to the Z-bar stiffeners on the panels. Bolt holes in the framing were slotted horizontally. Thus, there were both horizontal and vertical tolerances of about ½ in. in setting the panels.

Successive panels overlap, to keep out wind and rain, and the overlaps were calked with a polybutene compound. (Expansion joints at flashings, which, incidentally are stainless steel also, were calked with a polysulfide compound.) Plastics were selected for both calking and glazing compounds because of greater durability.

Stainless steel window frames, 4 ft 8-in. wide by 6 ft 7 in. high, were incorporated in the prefabricated story-high panels, as has been done with windows for other metal-clad skyscrapers. Consideration was given to installing frames and spandrels separately, but the idea was abandoned.

Spaces between the panels with windows and the windowless panels were covered with a cap plate.

• **Fully reversible window**—The sash, designed to be as leakproof as possible, can be rotated 360 deg on vertical pivots, to permit cleaning from the inside. A double gasket of polyvinyl chloride was inserted between the sash and the frame to keep out air and water. If moisture should leak past the outer gasket, it would be intercepted by a channel in the sill before reaching the inner gasket and drained off to the outside through a tube.

Glazing is a twin-ground ¼-in. plate glass, newly developed by Libbey-Owens-Ford Glass Co.

The lower three stories of the building are finished on the exterior with Pittsburgh Plate Glass Co.'s $\frac{1}{32}$- in. structural glass. About 30,000 sq ft of the blue-colored glass are set in stainless steel frames.

3. CLIPS on the stainless steel panels were bolted to the secondary framing to anchor the walls.

• **Vertical transportation**—To speed an estimated 7,500 tenants of the building to their destination, 32 automatic, operatorless elevators were installed. Arranged in six banks, they will operate at speeds up to 1,200 fpm. In addition, two 4-ft-wide moving stairs will provide transportation from an underground, shop-lined concourse to the street-level lobby. All equipment will be treated extensively with stainless steel.

Four signal-controlled service elevators also were installed. These have an 8,000-lb capacity.

• **High-voltage distribution**—For econ-

4. STAINLESS STEEL FACADE consists of alternate vertical strips of window and solid panels, each with stamped out decorative pattern.

omy, electric power will be distributed throughout the building by a 265/460-v, 3-phase system, instead of the 120/208-v system used in most New York City buildings.

The high-voltage power will be transmitted to the various floors through eight vertical busbars. At each level, the power will be distributed above the ceiling to transformers, where it will be stepped down to 120 v. The lower voltage will be distributed by underfloor ducts.

Tenants will select their own lighting. Requirements are expected to average 6 watts per sq ft, including power for bookkeeping machines.

• **Designers and builders**—The Socony Mobil Building was designed for Galbreath Corp. by Harrison & Abramovitz and John B. Peterkin, associated architects. Edwards & Hjorth were structural engineers; Jaros, Baum & Bolles, mechanical engineers, and Edward E. Ashley, electrical engineer. All are New York City firms.

For Turner Construction Co., L. E. Gilmore is project superintendent and E. F. Bennett, field superintendent, with F. W. Evans, assistant superintendent, in charge of materials handling. M. H. Parsons is project manager. Walter E. Kurkela was superintendent for American Bridge. F. H. Sparks Co. erected the stainless steel panels and windows, which were supplied by Truscon Steel Division, Republic Steel Corp. Rizzi-Pavarini put in the concrete floors and fireproofing. Otis Elevator Co. installed elevators and escalators. J. Harry McNally Mason Corp. was the masonry subcontractor.

New Anti-Fluoridation Move: Picket Treated Cities

In the midst of its deliberations on fluoridation, the City Council of Niagara Falls, N. Y., received a letter from the International Safe Water Assn., stating the "plans also include the erection of suitable signs at the outskirts of all fluoridated communities."

Apparently intended to strike at the Achilles Heel of this famous tourist city, the letter said a tourist directory was being prepared "for the benefit of the 40,000,000 Americans who voted against fluoridation in their respective communities and who will wish to avoid cities in which sodium fluoride has been added to the drinking water."

The City Council solemnly voted to notify the association that Niagara Falls' water supply is not yet fluoridated, then retired to consider the proposed boycott.

Geological Survey Reports World Waterpower Potential

The U. S. Geological Survey has released its Circular 367 titled "Developed and Potential Waterpower of the United States and other Countries of the World, Dec 1954", by Lloyd L. Young. This 14-page circular is mostly a tabulation of installed and potential waterpower, known and as estimated from available information.

In an abstract of the report, Young reports that installed capacity of the waterpower plants of the world was 130,000,000 hp on Dec. 31, 1954. The U. S. had about 35,000,000 hp, or 27% of the world total.

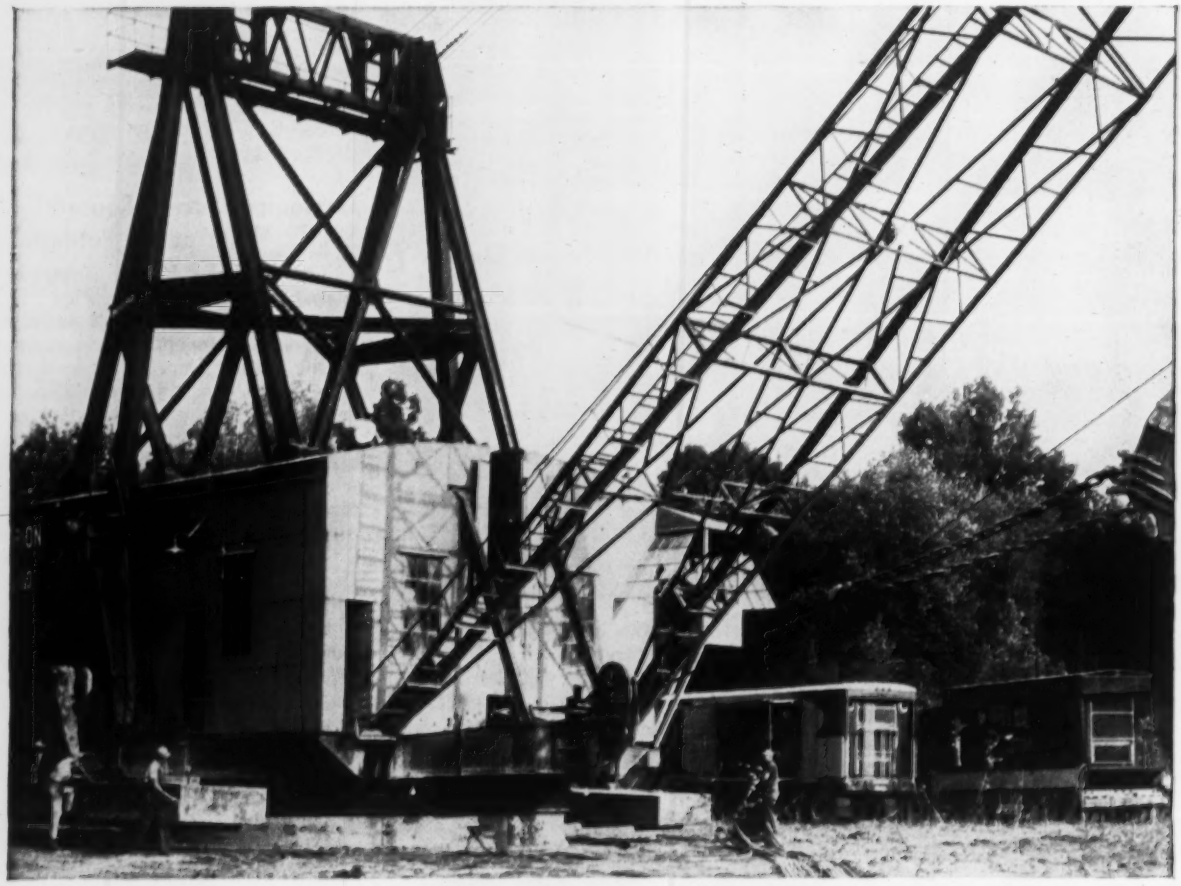
Figuring on the ordinary minimum flow of streams in their present stage of development, world waterpower potential is estimated at 649,000,000 hp of which the U. S. possesses 46,500,000 hp. However, mean flow of the world's streams would produce about 3,000,000,000 hp of energy if all physically feasible sites were developed. For the U. S., the corresponding figure for mean flow is 116,000,000 hp.

Within the U. S., the three Pacific Coast states possessed some 42% of the nation's waterpower resources: these along with the eight states of the Rocky Mountain area possess nearly 55% of the potential waterpower of the nation.

This circular, tracing waterpower growth of the world since 1920, and summarizing the 1954 picture as to installation and potential, is available free of charge from the Geological Survey, U. S. Department of the Interior, Washington 25, D. C.

SAXTON MOVES 560-TON DRAGLINE 7 MILES IN 7 DAYS

Thousands of dollars and hundreds of hours saved by use of two CAT* Mobile Electric Sets, powering it on a rugged trek across highways, railroads, utility lines, swampy bottom land and a 50-foot river!

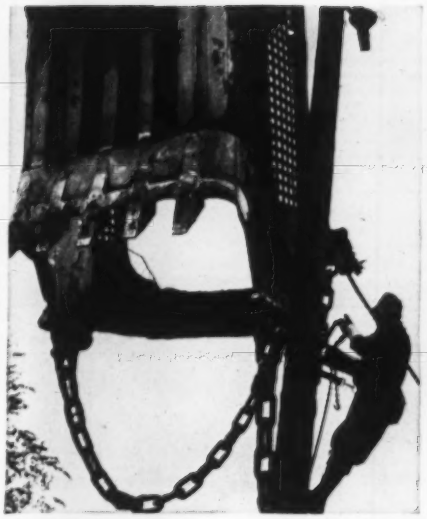


Power to move this 560-ton dragline seven miles cross country was supplied by two Cat D397 Mobile Electric Sets. The journey continued round the clock, ceasing at night only when roads, railroads or power lines were met.

With its strip mine in Somerville, Indiana, exhausted, the Saxton Coal Company decided to move to a new area near Oakland City, seven miles away. This posed many problems. One of the biggest was how to transfer its 560-ton Marion electric 7400 walking dragline.

Three methods were available: (1) Disassembling the unit and then reassembling it at the new area. This would cost about $60,000 and take three months. (2) Using utility power, which meant erecting lines, taking them down and erecting them again. This would cost about $45,000 and take thirty days. (3) Using mobile power. This would cost about $30,000 and take less time.

Saxton officials decided upon the third method. For power, they chose two Caterpillar* D397 Portable Electric Sets with a combined output of 630 KW. Then they negotiated for passage across private property, power lines, railroads and highways.



Preparing to lift a power line pole out of the way. A total of five power lines had to be crossed.

Crossing bottom land, a D7 clears off the top layer of sod to prevent balling of sod in front of the dragline tub. Usually a 100-foot swath was 'dozed for passage.

Crossing State Highway No. 64, a D7 helps the dragline prepare a protective bed of earth five feet deep. Dragline in rear, along with another D7, does necessary restoration to terrain.

Cat D397 Mobile Electric Set moving up. Dragline traveled 2000 ft. between electric set moves.

Along with the two D397s, Saxton used two Cat D7 Tractors with Bulldozers and a Bucyrus Erie 15B dragline. Depending on the need, the 'dozers cleared land ahead of the 560-ton giant, replaced damaged terrain and handled other earthmoving chores. Great care was taken all along the route to leave the areas crossed in good condition.

Two power cables, each 1000 feet long, were used to walk the dragline. This allowed the unit to travel 2000 feet before the Cat Mobile Electric Sets had to unhook and move. They were reset 1000 feet beyond the dragline. The dragline averaged 400 feet an hour in good going.

Whenever possible, the dragline traveled around the clock, except in crossing highways, railroads or power lines. In all, a total of seven roads, five power lines and three railroads were crossed, plus pipe lines, water lines and a river.

Crossing the South Fork of the Patoka river, about 50 feet wide and 12 feet deep, presented the greatest risk. Although the flow is not swift, there is the threat of torrents from heavy rains.

Instead of laying tubes in the river bottom, a diversion canal was built. To allow the dragline to cross, about 3000 cubic yards of dirt were dug by the dragline itself and compacted by the 'dozers. After crossing, the dragline cleared the channel. Meanwhile, the rugged D7s were clearing land ahead.

Good weather held during the journey, which required seven working days. Considering the length of the route and the hazards met, the operation progressed well. Said Bernard Youngs, vice president of Saxton Coal Company, Petersburg, "Mobile power is the way to move one of these machines."

Throughout the rugged trek, the Caterpillar units delivered the typical reliable performance expected of them. With electric sets up to 315 KW, there's a range of power suitable for all types of jobs. All Cat Electric Sets are backed by prompt service from the Caterpillar Dealer, who will be glad to furnish complete details about them.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS, U. S. A.

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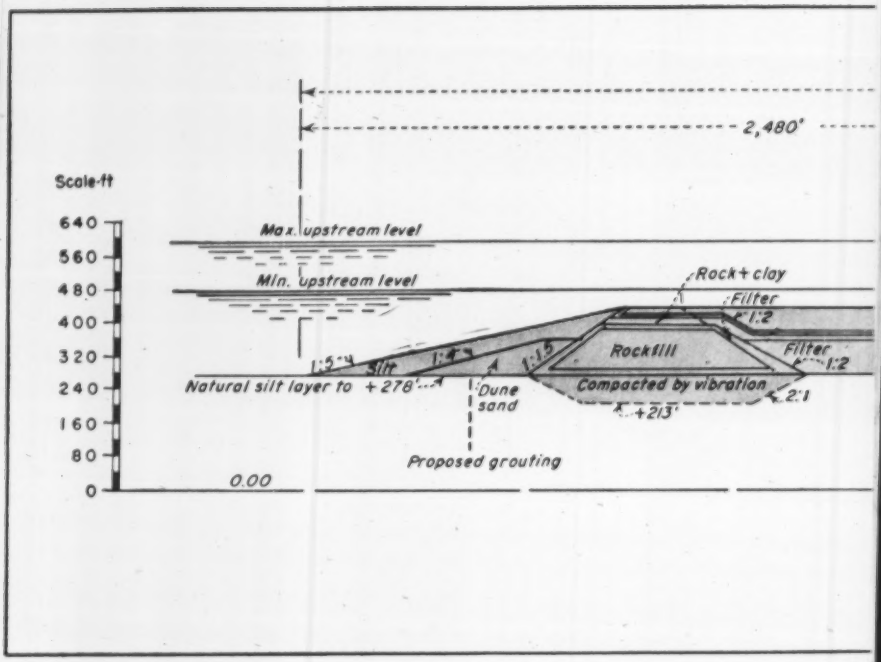
Egypt's proposed Nile River project—of current international concern—becomes increasingly interesting with this release of preliminary design details.



Aswan High Dam: There's Been Nothing

Sadd el-Aali (the high dam), planned for the Nile above existing Aswan Dam, has been of international financial interest in recent weeks as Egypt has sought money to build it.

When financing eventually becomes arranged, a project even more spectacular than its $1.3 billion price tag will develop to sustain international engineering interest over a ten-year construction period.

In many respects, this will be the greatest single dam project ever undertaken. A 361-ft high rockfill structure, with a volume near 55 million cubic yards, it is now under design in the office of the British consulting firm of Sir Alexander Gibb and Partners. Among its many spectacular features will be seven 54.1-ft diameter diversion tunnels and four 46.6-ft power tunnels—about 13 miles of tunnel in all. Total rock excavation will be over 22,000,000 cu yd.

To the Egyptians, Aswan High Dam, as it is called, can mean an end to Nile River floods. At the same time it can provide over-year storage for enough irrigation water to add some 30% to Egypt's total arable land. Finally, its stored water will turn 16 turbines of 120,000-kw capacity while also doubling the present power potential of Aswan Dam downstream. Economically, its total effect will be to increase Egypt's national income by $1 billion annually.

A reservoir over 300 miles long and holding close to four times the water in Lake Mead, now the world's largest man-made lake, will store over 105 million acre-ft of water behind Aswan High Dam.

To be built in the backwater of the existing Aswan Dam 4 miles downstream, Aswan High Dam, pictured above as preliminarily planned, is a massive rockfill with clay core, upstream blanket and grout cut off. Among its unique features will be the incorporation of the construction cofferdam in the upstream blanket, and the armoring of the dam's crest with reinforced concrete to make it safe against non-atomic bombings (in black below crest in drawing).

Discussed for decades, the Aswan High Dam has been under serious investigation since 1952. German engineers were commissioned to do preliminary investigations and design. And in 1954 a board of consultants studied the proposed design and construction, making recommendations now being incorporated in the final design under way.

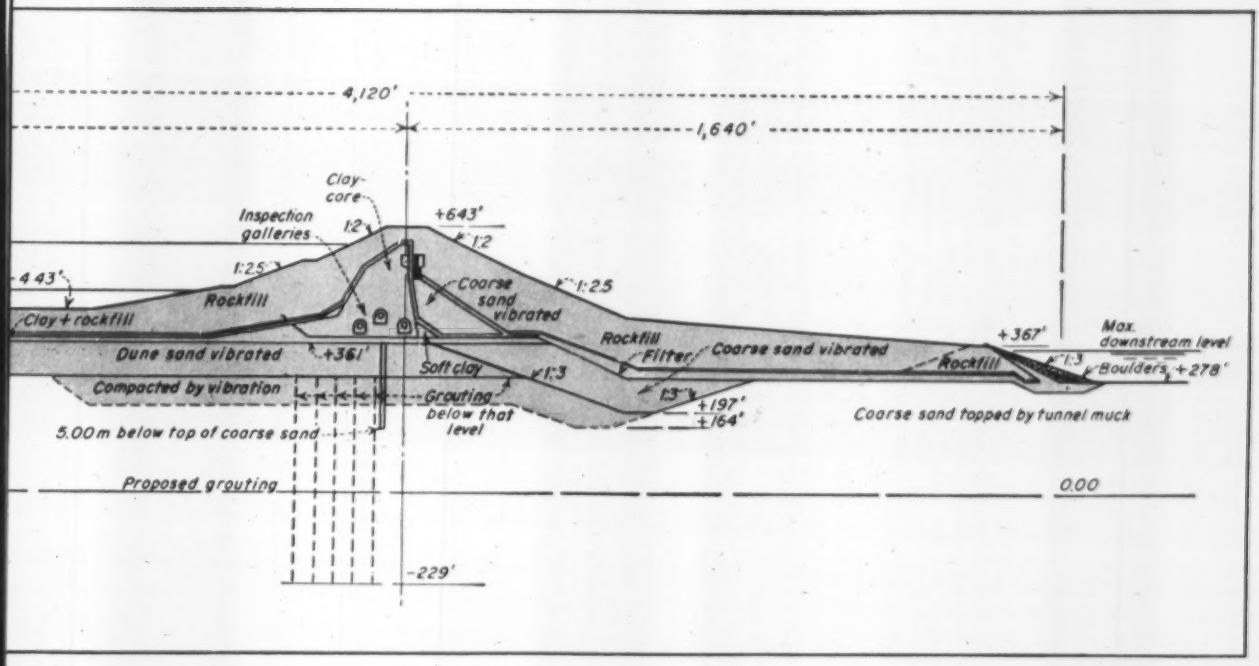
The consultants were I. C. Steele, Lorenz G. Straub and Karl Terzaghi of the U. S.; Andre Coyne of France; and Max Pruess of Germany. Pruess was the board's bomb-effect expert; he is engineer in charge of Moehne Dam in Germany, bombed by the British in World War II (ENR May 20, 1943, p. 51).

Their December, 1954, report was summarized in four main parts:

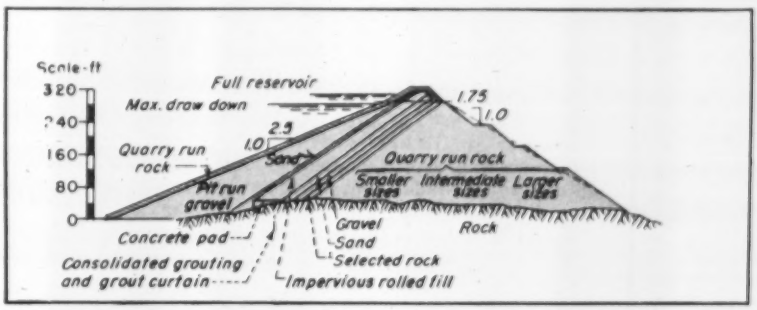
1. The dam section proposed is as

Size of the Dam

Height—361 ft
Length—3.1 miles
Thickness of base—4,276 ft
Volume of fill—54.93 million cubic yards
Reservoir capacity—105 million acre-ft
Steel required—34,000 tons
Excavation in rock—22.2 million cubic yards
Diversion tunnels—Seven, each 6,883 ft long and 54.1 ft in diameter
Power tunnels—Four, each 4,920 ft long and 46.6 ft in diameter



Quite Like It



Just for comparison here is Kenney Dam on Alcan's Kitimat Project in British Columbia, drawn to the same approximate scale. Volume is 4 million cu yd. Aswan High Dam will be 55 million cu yd.

safe as the safest rockfill dams resting on sediment because it has the double advantage of both an upstream blanket and a grout cut-off.

2. If war threatened bombings, the water level could be kept safely 52 ft below the dam's crest, which would have heavily reinforced concrete protection. Damage to the upstream blanket would merely increase seepage through the dam, which could be reduced by supplementary grouting.

3. The upstream cofferdam, key to diversion of the Nile for construction of the major portion of the dam, is a practical structure which will be safe beyond any doubt.

4. Time required for the whole project depends primarily on completion of the diversion tunnels. Their location and cross-section are determined now, and they should be started without delay.

• **Consultants' findings**—These major conclusions were based on study of site selection, the general layout, design of the dam and tunnels, materials of construction, the construction plan and the estimated costs.

The site was found acceptable for its topography and geology (it's in a gorge), for the availability of impervious material, and for the relatively low velocity of river flow.

It is a site between two short valleys descending to the Nile from the east at about right angles. The valleys are 6,560 ft apart and the dam, 4,260 ft thick at its base, will fit nicely between them. The upstream valley will serve as forebay for seven diversion tunnels, and the downstream valley could be the afterbay.

With the upstream toe of the dam some 1,300 ft below the point of upstream diversion, it is anticipated that Nile silt will deposit quickly against the diversion dam to form a natural extension of the placed upstream blanket. (The upstream blanket and impervious core material will also be Nile silt.

With diversion tunnels on the east (right) bank of the river, four power tunnels, the powerhouse and an emergency spillway will be located on the left bank in very favorable rock and topography. The powerhouse will be underground. The spillway, strictly for catastrophic floods, will be a low concrete weir to discharge into a shallow valley leading back into the Nile about ½ mile below the dam.

• **Choice of alternates**—In its preliminary design of the dam itself, the German firm Hochtief and Dortmund Union submitted two alternative projects: "horizontal sealing" and a "combined solution," the latter involves an upstream blanket and concrete cutoff wall from the clay core to bedrock.

The board of consultants studied

AT THE SITE OF THE PROPOSED DAM two who are concerned with it stand opposite a centerline stripe painted on the Nile's east bank. They are Hazzen Zaky on the left, of the Egyptian authority planning the project and Neal Bass of the World Bank. (Photo by Gail A. Hathaway, consultant to the World Bank)

both and chose the former, with but one member dissenting. The favored horizontal sealing design, as shown, has the upstream clay blanket and a broad inverted filter downstream.

The only practical way to construct such a core wall as was contemplated in the "combined solution" would be through shafts sunk by the freezing method. This method was explored in consultation with Professor Mohr, recognized German authority in the field. Then, over the objection of member Pruess, the board decided against the cutoff wall and chose instead a "combined solution" of its own with a 196-ft wide clay-cement grout curtain.

Among reasons for rejecting the cutoff wall alternative was the requirement of great skill and experience in the freezing method. Very few existing firms could do the work, and a blow-out during construction could be a catastrophe. Further it was reasoned that the concrete cutoff wall of unprecedented height (820 ft) would deflect with initial core movement as the reservoir filled. Despite elaborate provisions set forth for sealing of cracks and allowing for deformation of material near the core wall, four of the five consultants declined to take responsibility for performance they deemed unpredictable to full degree of certainty.

• **Construction materials**—Impervious material, dune sand, rockfill, filter material and clay for grouting purposes will be needed in very great quantities for this project. Core and blanket material will be made of Nile silt; sufficient deposits are close by. Its water content will have to be reduced before it is placed in the dam, but otherwise it is a most acceptable, highly impermeable material. Because of nature of the silt, its consolidation will proceed at a slow rate on the dam.

Dune sand is available in almost unlimited quantity, and filter material can be dredged from the river bottom or screened from the tunnel muck. Clay quarries also abound within reasonable distance.

• **Cofferdam is vital**—The upstream cofferdam, to divert the Nile through four right-bank tunnels, could be built in three years. It would be a 130-ft high dam 1,640 ft long built in water 65 ft deep with a discharge of more than 30,000 cfs in flood.

This cofferdam, deemed relatively easy to build in the controlled-level lake behind existing Aswan Dam, probably will be formed of rock placed through trapdoors in barges and of filter material placed carefully by bottom-dump buckets; but such details of construction are yet to be fixed.

The completed cofferdam alone will be a permanent asset to irrigation in the Nile Valley, storing water as it will while the main dam construction proceeds. Diversion, therefore, should be beneficial and not interfere with irrigation.

Tentatively, the vital upstream cofferdam will be as shown in the drawing: a rockfill on an inverted filter with a vibrated dune sand blanket. Investigations may find grouting necessary beneath it.

• **Unlined tunnels planned**—The seven diversion tunnels are planned to be unlined except where joints in the generally sound granite might require support. The consultants recommended a specification that deviation from design line not exceed 30 cm (about a foot) so that tunnel-wall roughness will not cause too much frictional head loss. The specified Manning coefficient of roughness is not to exceed 0.030.

It is estimated that four of the seven diversion tunnels could be finished in the third year of construction; the remaining three to be completed in the fourth year.

• **Timetable**—A construction schedule would shape up like this:

1st year—Start diversion tunnels; prepare river bottom for upstream cofferdam; begin grouting for main dam.

2nd year—Continue with tunnels; bring cofferdam to El. 315; continue grouting.

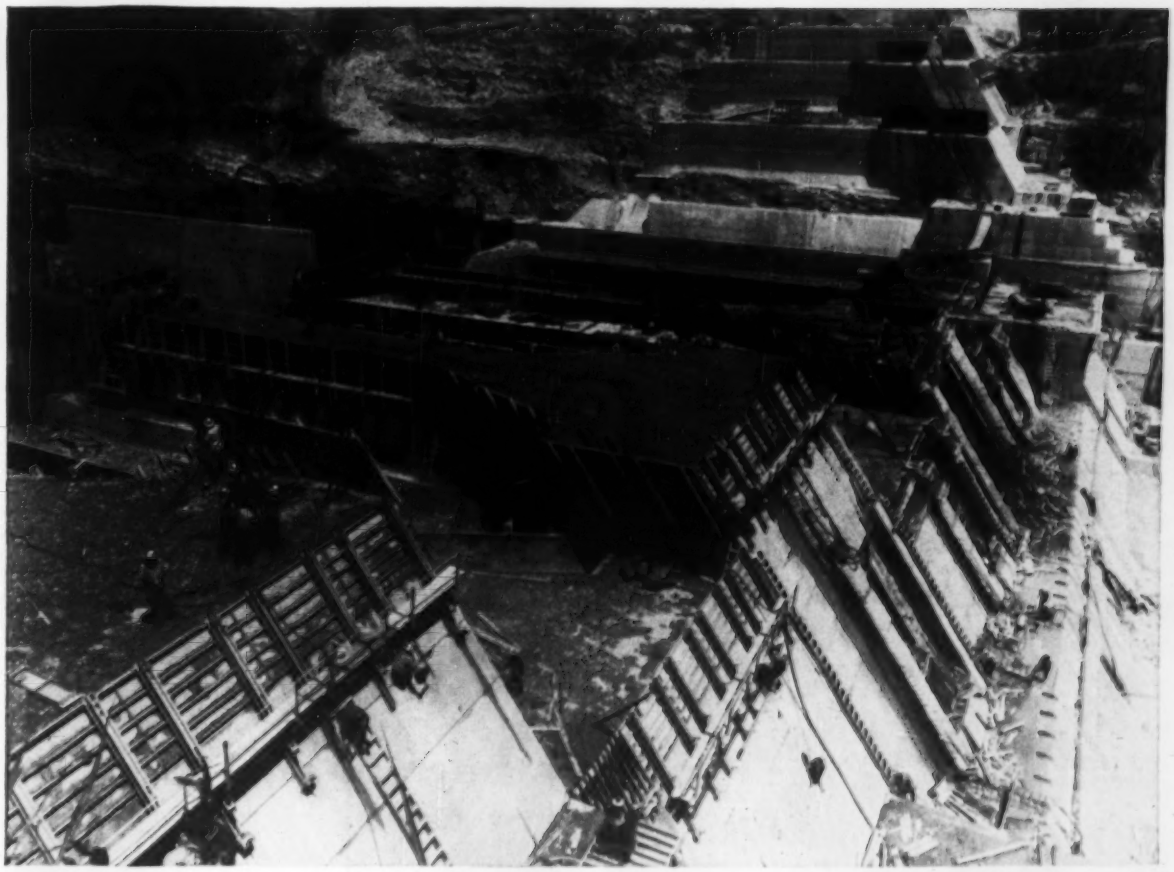
3rd year—Complete and open four diversion tunnels; bring cofferdam to El. 344; continue preparations for main dam.

4th year—Open remaining three tunnels; raise upstream cofferdam to El. 425; build downstream cofferdam to El. 365.

This would complete the first stage of construction.

In the 5th and 6th years, second stage construction would take Aswan High Dam up to about El. 395. The fine sand strata beneath the dam would be completed and compacted; a drainage ditch downstream of the grout curtain would be dredged out and filled with coarse sand; dune sand would be placed as shown in the section and compacted by vibration; construction of the upstream blanket would be completed from cofferdam to clay core; tunnels, open cuts and the powerhouse cavern would be excavated in the left bank.

The third stage, extending probably to a 10th year of construction, would see completion of the clay core, reinforced concrete inspection galleries, the dam's concrete crest protector, installation of the eight hydraulic power units and construction of the emergency spillway.



Brown & Root, Inc., builds Peligre Dam in Haiti with Blaw-Knox Steel Forms

• The construction of the Peligre Dam project by Brown & Root, Inc., of Houston, is a typical example of the way Blaw-Knox Steel Forms and Blaw-Knox Engineers' Consultation Service can help solve difficult concreting problems. This buttress-type dam, which will span Haiti's biggest river, the central Artibonite, will be 1075 feet long and 225 feet high.

Among the problems which faced Brown & Root engineers was forming the overhang buttress section. To solve this problem, Blaw-Knox suggested a special type cantilever form.

Whether the construction project is a big dam, tunnel, bridge, retaining wall or sewer, Blaw-Knox engineers can help in the preliminary planning stage to solve difficult forming problems *before* the plans are on the drawing board.

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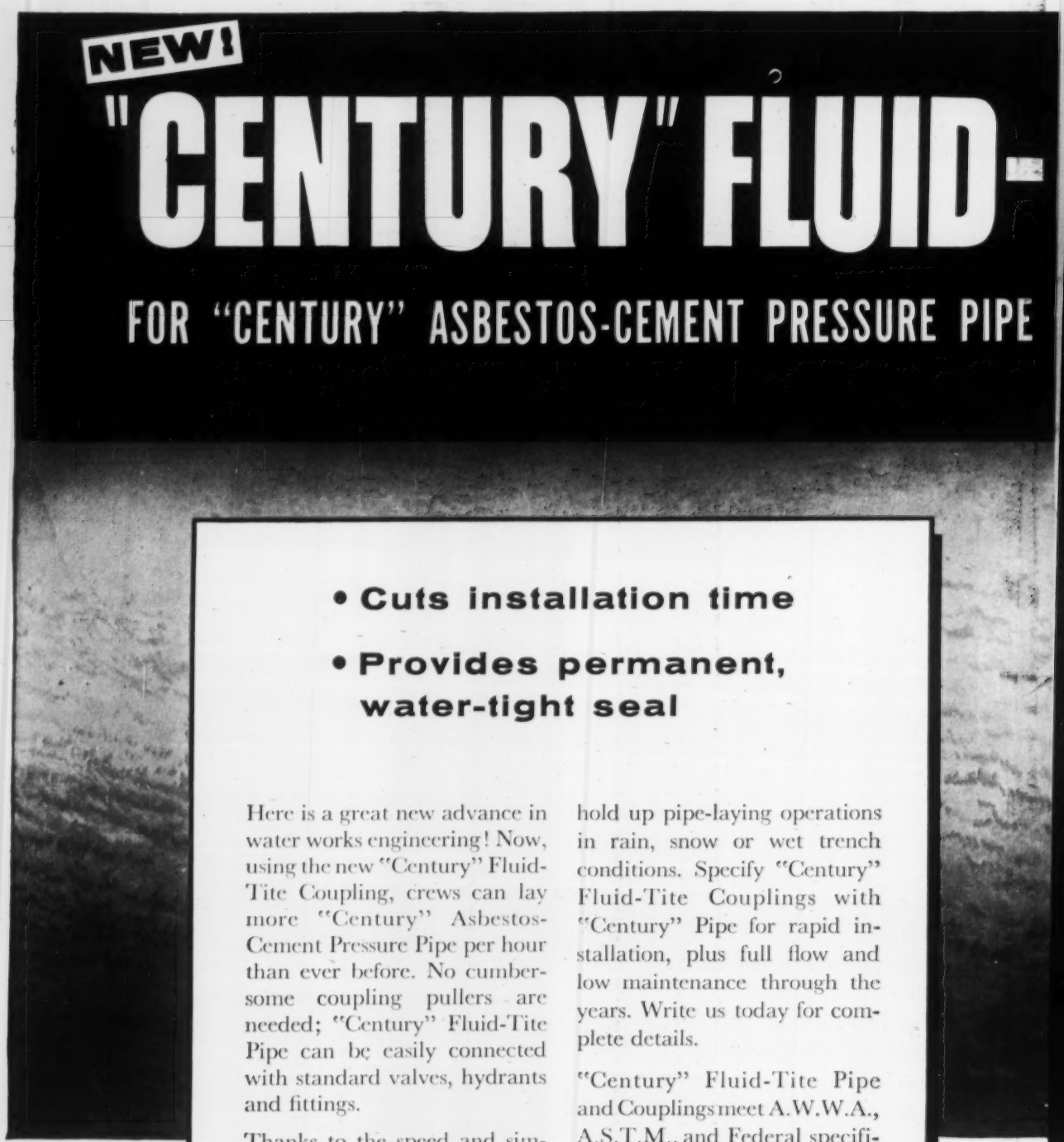

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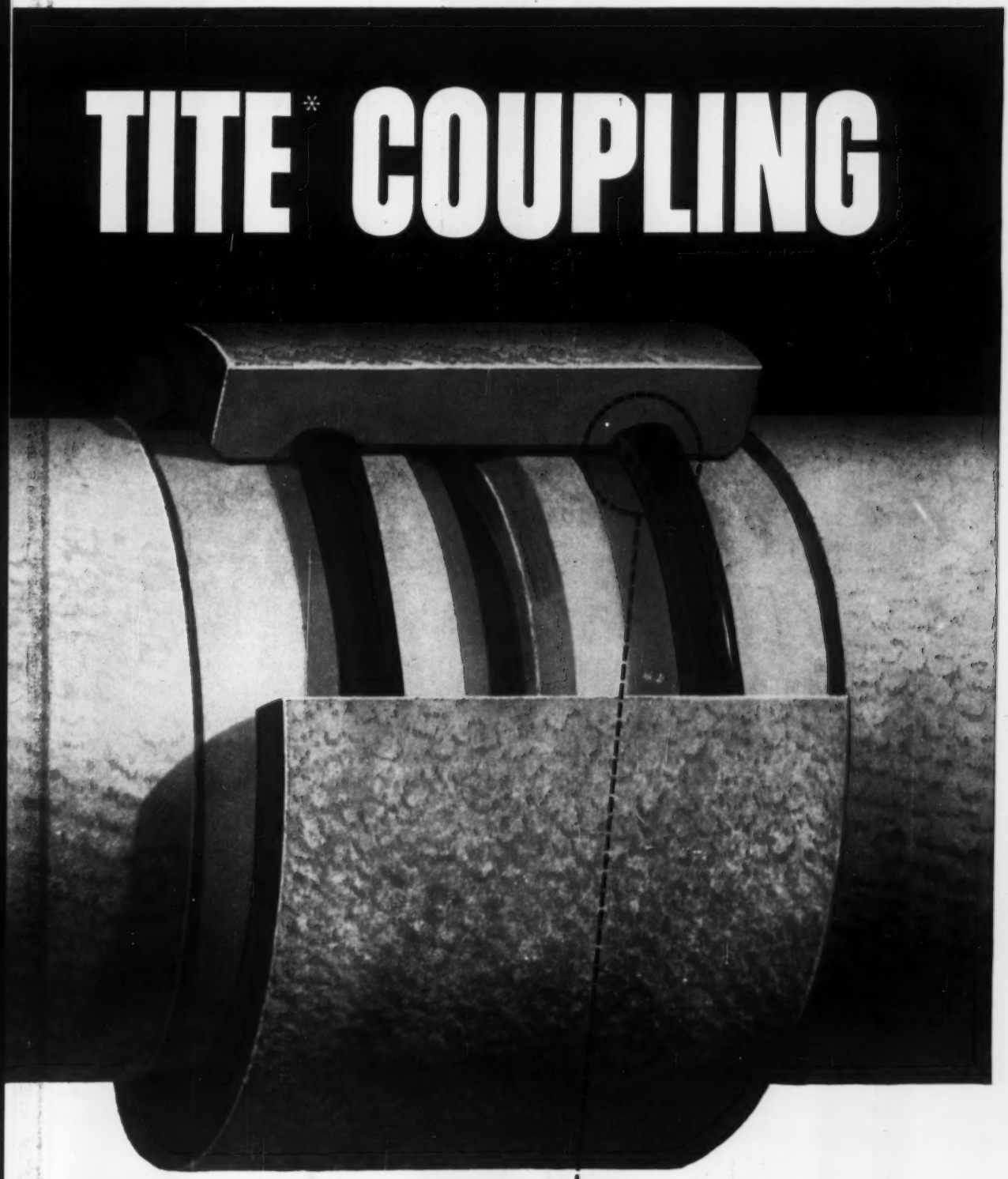
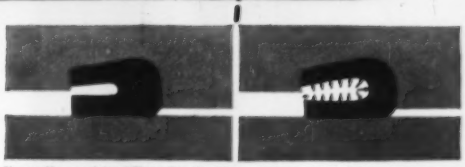


SELF-ENERGIZING SEALING RINGS allow pipe to slide into coupling easily. Water pressure automatically expands the rings. The higher the internal water pressure, the tighter the seal.



New self-energizing "Fluid-Tite" sealing rings have tapered surfaces, and compress, to permit pipe to slide in easily.

When main is filled, rings expand with application of internal water pressure, creating a tighter seal.

*Patent applied for

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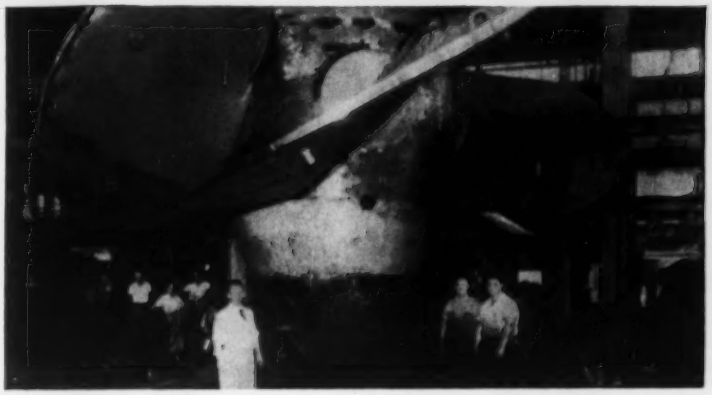
CHAIN BELT COMPANY

At Gavins Point powerhouse a draft tube liner is placed . . .



And this adjustable-blade turbine will be in line with two others to make . . .

The Only Three Kaplans on the Missouri

At Gavins Point Dam—where Missouri River flow is to be reregulated finally after use at Fort Randall, Oahe and Garrison dams upstream—the only three Kaplan turbines (propeller type) on the river will develop a total of 100,000 kw.

Installation of the unit 1 turbine housing is well along at Gavins Point powerhouse near Yankton, S. D.; river closure was accomplished last August (ENR Aug 11, p. 21). The runner itself will be installed early this year.

Low head behind Gavins Point dam (40 to 66 ft) dictated choice of the river's only Kaplan units by Corps of Engineer designers of the four mainstem flood control and power projects. (Usual head limitation on the Kaplan turbine is about 70 ft, although they are used under heads up to 100 ft.)

All other units on the lower Missouri have Francis type runners, medium head units. (The Francis turbine is good up to 800 ft, with unusual installations to 1,100-ft head; beyond that, impulse runners, the Pelton type, are used under the highest heads developed.) Fort Randall's head varies from 75 to 145 ft; Oahe's will be 120 to 200 ft; and Garrison's will have about the same range as Oahe.

A second reason for using Kaplan runners at Gavins Point is this dam's function as a reregulation structure. Surges as high as 5 ft will be sent downstream from Fort Randall and must be ironed out by Gavins Point to prevent damage further downstream. The Kaplan runners—with adjustable blades—will be able to adjust relatively close to such flow variation.

Each 250-ton runner for Gavins Point will have blade adjustment actuated through gears by servo-motors. Blade adjustment will be controlled by governors, which also will be connected with the gate openings to control water flow to the turbines.

Under full load at rated head, each Gavins Point Kaplan turbine will pass 9,000 cfs of water—more water than Francis units at Fort Randall take under maximum head. Yet the Gavins Point units also will adjust to operate efficiently under less than full load. Francis turbines, on the other hand, drop gradually in efficiency as percent of full load falls off.

• **Installation being pushed**—The draft tube liner, stay ring and speed ring are major pieces already installed in the turbine well for Gavins Point's unit 1 (see photo). The generator is already on the job. And the turbine runner (pictured in the manufacturer's shop) will be shipped in parts and installed piecemeal at the powerhouse. Baldwin-Lima-Hamilton Corp. is making the Gavins Point turbines in its Philadelphia plant.

Unit 1 is expected to be on the line early next fall with No. 2 and 3 to follow at four-month intervals. Gavins Point is a project of the Garrison District of the Army Engineers. Col. H. L. Hihe, Jr. is District Engineer.

ONE roller does compaction job of TWO!

when the one is a BUFFALO-SPRINGFIELD 3-AXLE TANDEM with exclusive "WALKING BEAM" compaction control!

On a recent Maine Turnpike project, *one* Buffalo-Springfield 3-axle tandem WALKING BEAM roller handled the pavement compaction instead of the two that otherwise would have been required.

Several sets of twin finishers laid 2,500 tons of hot mix each 11-hour day. The surface was put down in two 1½" thick courses over a 4" thick compacted stone base. Haul from hot mix plant to paving point was handled by a fleet of 15 trucks.

Without expert planning, traffic conditions would have been chaotic. An aggregate truck rolled up to the plant every 3 to 4 minutes, and asphalt trucks arrived and left almost as frequently.

A remarkable high-speed blacktopping job . . . accomplished on a 'round-the-clock schedule by expert traffic management, several twin finisher set-ups, and using Buffalo-Springfield true WALKING BEAM compaction to complete the job with maximum efficiency in the *fewest* number of passes.

Whether your next compaction job is a *special*, or one on which you must rely on maximum compaction accomplished in the shortest possible time—with fewest passes, and resulting highest profits for yourself—you'll be *sure* of unmatched results with a Buffalo-Springfield WALKING BEAM 3-axle tandem roller!

See your nearest Buffalo-Springfield distributor now. Ask or write for Bulletin No. S-71-1255.

Anything less than a genuine Buffalo-Springfield 3-Axle Tandem with WALKING-BEAM Compaction Control is old-fashioned!

BEAM is in "semi-locked" position. Both guide rolls are suspended from a single pivoting beam. End guide roll can rise above, but not go below its normal position.

FIRST guide roll encounters high spot. Walking Beam permits it to pass over the hump exerting only its normal pressure. This "prepares" material for the high compaction of the center roll.

CENTER guide roll rises on hump. This lifts end guide roll off the ground and transfers its weight, along with some weight of the drive roll, to the center roll which now exerts a compaction effort equal to almost 3 times its normal weight.

DRIVE roll exerts normal compaction as it passes over. All this happens when the Walking Beam is in a "semi-locked" position. When unlocked, it follows surface contours. Fully locked, all three rolls are held rigidly in the same plane.

BUFFALO ROLLER COMPANY — THE STANDARD OF COMPARISON — **SPRINGFIELD**

SPRINGFIELD, OHIO, U. S. A.

THE LEADER IN COMPACTION EQUIPMENT DESIGN AND MANUFACTURE

New Products

New Pump and New Name For Dayton Pump & Mfg. Co.

A well known, 50-year-old firm, the Dayton Pump and Manufacturing Co., changed its firm name in January. Henceforth, the company will be called the Tait Manufacturing Co., after founder and chairman of the board Frank M. Tait. The company will continue to produce the Rapidayton line of pumps, to which the company has now added a new stainless steel and nylon submersible pump for 4-in. wells.

The new pump, introduced simultaneously with the change in name, is called the Rapidayton Dolphin. Instead of the usual brass construction, the pump has a stainless steel and nylon impeller. The impeller is hydraulically balanced to eliminate thrust, and the pump does not have thrust bearings. The pump motor is lifetime sealed and filled with dielectric fluid to give optimum performance in its power range. Capacities range up to 1,000 gallons per hour at pressures to 80 lb, which will get water out of wells to 500 ft deep. Tait Manufacturing Co., 500 N. Webster St., Dayton 1, Ohio.

Single Side Band System Reduces Radio Interference

A new two-way radio system that promises to reduce growing congestion in high frequency radio communications is now on the market. The new radio system, produced by RCA, is a complete transmitting and receiving system that cuts band-width requirements by half, yet is comparable in cost and simplicity to widely used conventional communications systems using twice as much of the frequency spectrum. The frequency spectrum available for communications of all types is limited, and interference between stations close to one another in the frequency band has recently become a serious problem.

The RCA units can be installed and used by people of little or no technical training and are applicable to both one-way and simultaneous two-way forms of communication. According to RCA it is now practicable to use single side band transmission for short haul systems wherever conventional AM equipment is in use.

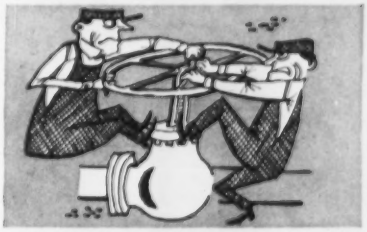
The equipment was field tested during the summer in communication between fixed shore stations and vessels on the Ohio and Mississippi Rivers. Radiomarine Corporation of America, 30 Rockefeller Plaza, New York 20, N. Y.

Biggest Piece of PVC

The plastic sheet pictured above may be the largest ever made. Weighing 500 lb, the 2-in.-thick piece is 48 in. wide and 96 in. long. Company officials claim that this is the first time such heavy gages of rigid polyvinyl chloride have ever been available commercially. Sheet 1¼, 1½, and 1¾-in. thick is also in production. Seiberling Rubber Co., Pastics Div., Newcomerstown, Ohio.

Do you have to operate your **PLUG VALVE** *like this?*

Or do you have to use Two Men *to operate your* **GATE VALVE** *like this?*



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Sizes **2"** *to* **36"**
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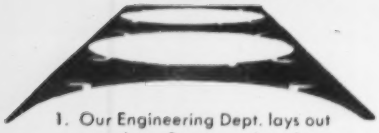

1. Our Engineering Dept. lays out complete flooring plan from your floor plan, sketch or overall dimensions.
2. A shop drawing showing layout of sizes, shape and cut-outs for obstructions is submitted for approval before fabrication.

3. Each panel is carefully checked by our inspectors before shipment and is clearly marked for quick installation.
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Light 1,500-W Generator Brings Power to the Job

Using a simplified germanium rectifier bridge for excitation, a new 1,500 watt generator weighs only 90 lb, yet supplies regulated-voltage power sufficient to run all types of hand tools. Homelite Div. of Textron American Inc. claims that a static excitation feature combined with a static control system limits the voltage change to less than 4% from no load to full load. The unit has four electrical outlets for 115 v 60 cycle AC.

A two-cycle gasoline engine powers the generator, which has an armature keyed directly to the crankshaft of the engine. Generous overload capacity prevents tool stalling when starting loads exceed operating loads.

The generator has a completely new accessory for idle control, consisting of a rectifier, relay and solenoid, which automatically switches the engine to idle speed when no current is drawn, and immediately brings the engine to full speed when load is applied. HOMELITE, PORT CHESTER, N. Y.

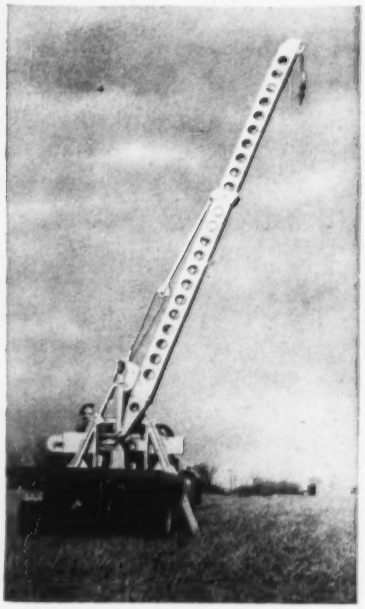
Plastic-coated Plywood Will Cost Less Soon

A new patching technique, expected to reduce the cost of plastic-coated fir plywood panels by as much as 15%, was announced recently by the United States Plywood Corp. and Crown Zellerbach Corp.

Key to the production cost reduction is a new machine that Crown Zellerbach designed and patented which automatically fills knotholes, splits and other irregularities in the wood panel. The patching machine applies a phenolic resin and filler compound to the defects, producing a flat, even surface, to which the plastics sheet will bond.

The successful development of a method to fill surface defects means that lower grade, lower cost panels can be used for plastic surfacing. Previously, only A grade plywood was suitable for the process. Now, plywood panels finished in plastics can be produced from saw logs at virtually the same price as A grade uncoated plywood.

The coated board is produced in widths of ⅞ to ¾-in. thicknesses. It will also be supplied in special precut



Hydraulics Lowers the Boom . . .

And telescopes it and raises it with a full capacity 3¼-ton load on the new hydraulically telescoping boom above. Full load telescoping allows the operator to sneak a load into hard to reach places. For instance, an operator can position the boom with its burden outside a window, run his boom through the window, and set the load down inside.

The boom telescopes from 17 to 27 ft. The unit has hydraulically operated outriggers operated from the truck cab. In addition to telescoping with a full load, the unit has full boom topping capacity—loads are lifted at the operator's option with loadline or the boom itself. The new hydraulic system on the boom utilizes seamless steel tubing in place of hydraulic hose. Pitman Manufacturing Co., 300 W. 79th Terrace, Kansas City, Mo.

wide-lapped siding with beveled edges and ventilation holes with furring strips applied. The plastic coating acts as a pre-finished paint base. In addition to the building field, the plastic-surfaced material is expected to find wide use in marine construction, for highway and commercial signs and general use. It will make possible the use of lower grade wood in exposed locations, extending the supply of plywood.

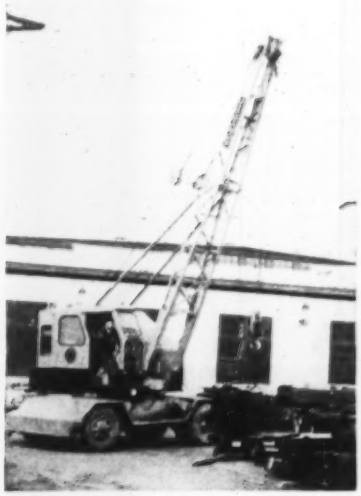
One-Man Cruiser Crane Travels at 21 MPH

A new cruiser crane that could handle city traffic without too much trouble was introduced this month. The 15-ton lift capacity crane is operated from one position for both travel and work and has a maximum speed of 21 mph. One engine supplies all power to the unit, which has four-wheel drive, power steering, air hydraulic brakes, and a torque converter for smooth power delivery. The Cruiser Crane is a version of the Koehring Company's Model 205 excavator. As a dipper, the crane has a ½-cu yd capacity.

The 15-ton capacity is rated at 85% tipping. Safety boom limit stops are standard equipment. The crane can lift 12.7 tons without outriggers over the back and travel with it.

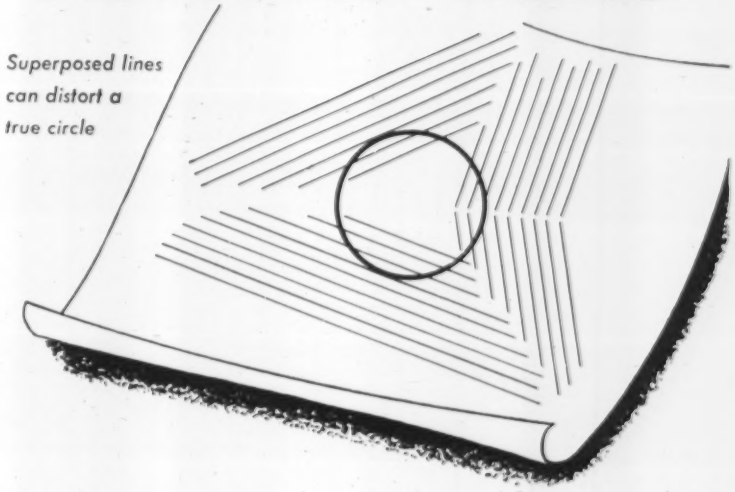
For special high lifts, the standard 25-ft boom can be lengthened to a maximum of 55 ft plus straight boom jobs of 15 to 30 ft.

Total weight of the unit with counterweights is 29,400 lb. Without counterweight, the machine is listed at less than 18,000 lb and conforms to most highway regulations. KOEHRING CO., 3026 W. CONCORDIA AVE., MILWAUKEE 16, WIS.



The Strange Case of the DISTORTED CIRCLE

Superposed lines can distort a true circle



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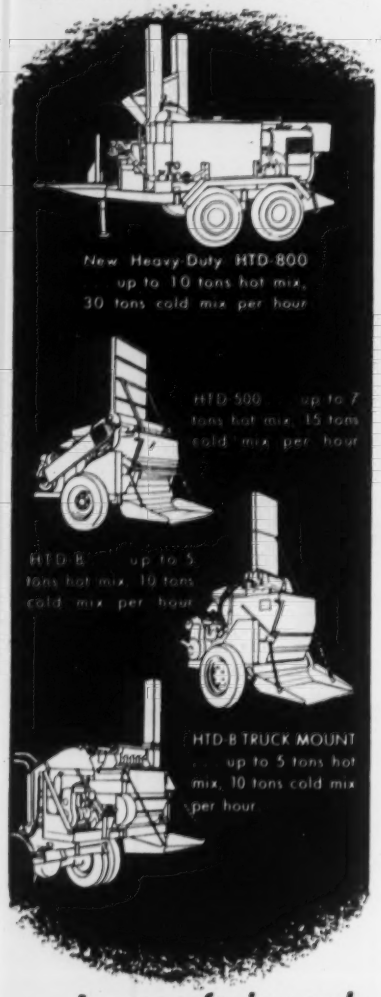
New Heavy Duty HTD-800
up to 10 tons hot mix,
30 tons cold mix per hour
HTD 500 up to 7
tons hot mix, 15 tons
cold mix per hour
HTD B up to 5
tons hot mix, 10 tons
cold mix per hour
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up to 5 tons hot
mix, 10 tons cold mix
per hour

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Men and Jobs

Maj. Gen. L. V. Prentiss

Eugene Reybold

Commander of Fort Belvoir To Retire

Gen. Louis V. Prentiss will succeed Gen. Eugene Reybold as executive vice president of ARBA, effective May 1

Maj. Gen. Louis V. Prentiss, recently appointed executive vice president of the American Road Builders' Association, will retire from the Corps of Engineers on April 30, after 35 years of military service. His ARBA appointment becomes effective May 1.

Engineer Commissioner for the District of Columbia during 1953 and 1954, Gen. Prentiss is now commanding general of The Engineer Center, Fort Belvoir, Va.

When he joins the ARBA, he will succeed Lt. Gen. Eugene Reybold (USA Ret.), World War II Chief of the Corps of Engineers, who has been with the ARBA since 1950. The association represents all branches of the highway construction industry, including federal, state and local officials, engineers, contractors, educators, manufacturers and materials producers.

Within the Corps of Engineers, Gen. Prentiss is perhaps best known for his service as District Engineer in Omaha, Neb., and as Southwestern Division Engineer in Dallas, Texas. His flood control, river and harbor work in the Missouri River Basin embraced construction of the Fort Randall and Oahe Dams in South Dakota. During his service in Texas he worked on the intra-coastal canal from Louisiana to Mexico and had charge of construction of 15 multiple purpose dams.

During this period, he organized and was chairman of the Arkansas-White-Red River Basins Inter-Agency Committee and was chairman of the Sabine River Interstate Compact Commission.

Serving in Europe during World War II, Gen. Prentiss became Chief of the Supply Division, Office of the Engineer, in Paris and later served as Deputy Chief Engineer and acting Chief Engineer, U. S. Forces, European Theater in Frankfort.

From time to time he has held a number of staff assignments both at Fort Belvoir and in Washington, D. C. These included service as Executive Officer at Belvoir and as Chief of the Readiness and Requirements Division, Office Director of Training, Army Service Forces, at the Pentagon in 1944. Following his assignment as Division Engineer in Dallas, he returned to Washington in 1952 as Assistant Chief of Engineers for Personnel and Administration.

Woods Is Elected Chairman Of Highway Research Board

Kenneth B. Woods was elected chairman of the Executive Committee of the Highway Research Board at its 34th annual meeting. Woods is head of the School of Civil Engineering at Purdue University and is director of the Joint Highway Research Project at Purdue University.

As board chairman, he succeeds G. Donald Kennedy, president of the Portland Cement Association, Chicago.

Operating under the auspices of the National Academy of Sciences and the National Research Council, the Highway Research Board is a cooperative organization of highway engineers and technicians.

Woods, who was previously associated with the Bureau of Tests in the Ohio State Department of Highways, has been engaged in highway engineering—both teaching and research—at Purdue since 1939. As director of the Joint Highway Research Project, he has supervised research on a multiplicity of subjects, ranging from frost action in soils to traffic paints and paving materials. The project is a cooperative undertaking between the university and the Indiana State Highway Commission.

In addition to his work at the university, Woods is a member of the Consulting Board of the Corps of Engineers and has done consulting work on railroads, highways and water resources both here and in Canada.

Men and Job Briefs

• **Associations**—The North Carolina Concrete Masonry Association names **Cecil T. Lewis** of Henderson, as president . . . **Lee H. Johnson** becomes head of the Louisiana section of ASCE . . . **Lyell C. Halverson**, Madsen Construction Co., Minneapolis, is elected president of the AGC of Minnesota.

• **Careers**—**C. W. Hartford**, Columbus, Ohio, is named acting director of the Ohio Turnpike Commission, succeeding **Frank C. Dunbar, Jr.**, who resigned . . . The Kentucky Highway Department appoints **Frank D. Harris** assistant district engineer at Owensboro, Ky. . . . **William P. Ware**, bituminous engineer, resigns from the North Carolina Highway Department to join the Rea Construction Company at Charlotte, N. C.

• **Business**—The Great Lakes Dredge & Dock Company, Chicago, names **Samuel D. Stickle** and **Karl E. Martersteck** as vice presidents . . . **James F. Beeson**, vice president and treasurer of Cunningham Engineers, Inc., is elected vice president of Cunningham-Limp Company, general contractors, Detroit, Michigan.

• **Education**—**Walter J. Seeley**, dean of Duke University School of Engineering, is named chairman of the North Carolina State Board of Engineers and Surveyors.

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J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

▲† Massachusetts—BA 2/19—U. S. Eng., 111 E. 16 St., New York, N. Y., Hoosic River basin, Adams Flood Control Proj., Unit No. 5, Adams, CIVENG-30-075-56-6, $1,500,000-$2,000,000. Extended date. Plans deposit $25. CD 1/27.

HEAVY CONSTRUCTION—LB & CA

▲ MAINE—State Hy. Comn., State House, Augusta.
W. H. Hinman, Inc., North Anson, Me., CA $2,080,-615. c. conc. and b. conc. 6.296 mi. "I" Freeport and Brunswick, F. A. Proj. I-IN-01-1 (8) and F-01-1 (11). Bids Jan. 25. CD 1/9.
John Caoobianco, 101 Tremont St., Boston, Mass., CA, $835,980, est. $718,000. W-703, extension transit shed, Castle Island, South Boston, BOSTON, MASS. State, Port Boston Comn., Div. Bldg. Constr., 38 Chauncy St., Boston, Mass. Bids Dec. 29. CD 1/5, under LB.
▲† Jefferson Constr. Corp., 75 First St., Cambridge, Mass. LB $1,780,000. airmen's dormitories, Westover Air Force Base, ENG-19-016-56-79, CHICOPEE FALLS, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Jan. 26. CD 1/18.

BUILDINGS—LB & CA

Bartlett-Brainard Co., 589 New Park Ave., West Hartford, Conn., CA Est. $814,000. 210x310 ft., 75,000 sq. ft. FACTORY, 50x128 ft. OFFICE, 1 story, brick, Granby St., BLOOMFIELD, CONN. Smyth Mfg. Co., Sigourney Tool Div., 9 Sigourney St., Hartford, Conn. Buck & Buck, 650 Main St., Hartford, archts. Moore & Salisbury, 1007 Farmington Ave., West Hartford, archts. Awarded Jan. 23.

MIDDLE ATLANTIC

BUILDINGS—SLC

N. J., Passaic—SCHOOL—Pope Pius XII, Diocesan High School, First St., soon lets contract school addn. $900,000. Fanning & Shaw, 49 Ward St., Paterson, archts. CD 7/7.
▲ Pa., Altoona—PLANT—Veeder-Root, Inc., 25 Sargent St., Hartford 2, Conn., soon lets contract plant to mfg. computers. $1,500,000. Ford, Bacon & Davis, 39 Broadway, New York, N. Y. consult. engrs. CD 9/16.

HEAVY CONSTRUCTION—LB & CA

▲ Nicholas DiMenna & Sons, Inc., 1515 Blondell Ave., New York 61, N. Y., CA $1,175,405, reconstr. sewer with combined relief sewer, appurtenances Boston Rd., Eden Terrace; grading, constr. guard rails where necessary Eden Terrace from Boston Rd. to Boller Ave., NEW YORK, N. Y. President Bronx Boro, Bronx County Bldg., 851 Grand Concourse, Bronx 51, N. Y. Bids Dec. 9. CD 12/13, under LB.
▲ PENNSYLVANIA—Pennsylvania Turnpike Comn., 11 N. Fourth St., Harrisburg.
George M. Brewster & Son, Inc., 275 W. Fort Lee Rd., Bogota, N. J. CA $3,722,873. constr. 3.54 mi. (sec. 37.1), Northeastern extension in Pittston Twp., Luzerne Co., and Moosic Boro, Lackawanna Co. CD 1/19, under LB.
B. F. Ziegler Co., 519 W. 5th St., Hazleton, Pa., CA $913,785, general work Northwest Reservoir, READING, PA. City, Reading, Pa. Bids Oct. 26. CD 10/24/45.
▲ Holloway Constr. Co., 29350 Joy Rd., Livonia, Mich., CA $1,129,445, Contr. 1, sewerage sys., Hickory Twp. SHARON, PA. Hickory Municipal Auth., 313-314 First Natl. Bank Bldg., Sharon, Pa. Bids Dec. 7. CD 12/15, under LB.

BUILDINGS—LB & CA

Bayberry Park Homes, c/o Nassau Home Realty Corp., 1 N. Merrick Ave., Merrick, N. Y. Owner Builds. $900,000. 47 HOUSES. Maple Ave. between Smith and Cedar Aves., ISLIP, N. Y.
▲ Connelly Homes, c/o Herman H. York, archt., 90-04 161 St., Jamaica, N. Y. Owner Builds. $1,800,000. 150 HOUSES on tract on Sunrise Hy. north of Hamilton Ave., LINDENHURST, N. Y.
▲ Rosewood Homes, c/o Trylon Realty Co., 98-89 Queens Blvd., Forest Hills, N. Y. Owner Builds. $1,700,000. 86 HOUSES. Terrehans Lane and South Oyster Bay Rd., LOCUST VALLEY, N. Y.
▲ Tandy & Allen Constr. Co., Inc., 280 Hackensack Ave., Hackensack, N. J. CA $1,297,000, general constr. GERIATRIC BLDG., Middletown State Homeopathic Hospital, MIDDLETOWN, N. Y. Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, N. Y. Bids Jan. 5. CD 1/10 under LB.
Peter Cerussi, c/o Sidney Goldhammer, archt., 6 Varick St., New York 13, N. Y. Separate Contracts. $900,-000. 12 story APARTMENT, Tiebout Ave. south of 184 St., NEW YORK, N. Y. CD 10/26.
▲ 999 Lexington Ave. Corp., 50 Broadway, New York 4, N. Y. Owner Builds. $1,800,000. APARTMENT, 974-996 Lexington Ave., from 71 to 72 Sts., NEW YORK, N. Y. CD 12/7.
▲ Tawson Corp., 38-18 33 St., Long Island City, N. Y. Owner Builds. $1,720,000. 12 story APARTMENT, 404-418 E. 66 St., NEW YORK, N. Y. CD 10/31.
Park Lake Homes, c/o Butterly & Green, Inc., 168-25 Hillside Ave., Jamaica, N. Y. Owner Builds. $870,-000. 67 HOUSES on tract at Grand Blvd. and West 18 St., NORTH BABYLON, N. Y.
▲ Purcell Bros., 171 Preston St., Ridgefield Park, N. J. LB $1,046,500, base bid, LB $1,016,500, Alt. No. 1; LB $50,000, Alt. No. 2, county WELFARE HOME, POMONA, N. Y. Bd. Supervs. Rockland Co., County Court House, New City, N. Y. Bids Jan. 17.
▲ Closter Heights Home, c/o H. Milkon Co., 35-12 Broadway, Fairlawn, N. J. Owner Builds, $1,600,000. 74 HOUSES on tract at Braeley Place and Walker Ave., CLOSTER, N. J.
▲ Joseph Skilken & Co., 383 S. 3 St., Columbus, O. CA $10,000,000. SHOPPING CENTER, CONWAY, PA. Pennsylvania Northern Lights Shoppers City, Inc., 383 S. Third St., Columbus, O. Bids Dec. 12. CD 12/9.
▲ Matthew Leivo & Sons, Inc., P. O. Box 669, New Castle Pa., CA $1,096,000, general constr., SENIOR HIGH SCHOOL addns., alterations, NEW CASTLE, PA. School Auth. of New Castle, New Castle, Pa. Bids Dec. 13. CD 12/21, under LB.
▲ The Mullan Contg. Co., 3945 Greenmount Ave., Baltimore 18, Md. CA $1,900,000. 13 story, 162x123x 134 ft. masonry APARTMENT, W. University Parkway, BALTIMORE, MD. University Parkway Club Apartment Bldg., 500 W. University Parkway, Baltimore, Md. Richard Hawley Cutting, 2074 E. 36 St., Cleveland 15, O., archt.

SOUTH

BUILDINGS—BA

▲ La., New Orleans—STATE OFFICE—BA 2/28—State Building Auth., Baton Rouge, 8 story, bsmnt. state office at civic center site. $4,000,000. Plans deposit $25. August Perez & Assocs., Audubon Bldg., Goldstein, Parham & Laboulsse, American Bank Bldg., and Fravot, Reed, Mathes & Bergman, 402 Nola Bldg., archts.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	Middle West
Middle Atlantic	West of Mississippi
South	Far West

PROPOSED WORK

Water Supply	Public Buildings
Sewers, Waste Disposal	Mass Housing
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

HEAVY CONSTRUCTION—LB & CA

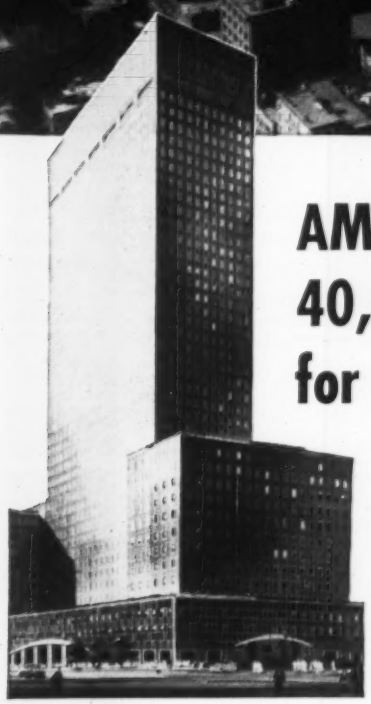
▲ Mid-South Constr. Co., Metairie, La., LB $1,069,000 Total base bid (irregular bid), Contr. 5514 A, sewerage collection sys. to Outfall No. 1, incl force mains, levee crossings, outfall structure; Contr. 5514B, sewerage collection sys. to outfall No. 2, incl. force mains, levee crossing and outfall structure, Contr. 5514C, pump stations for entire sys. ST. BERNARD, LA. St. Bernard Sewerage Dist. No. 2, St. Bernard Parish, Court House, Chalmette, La. Bids Jan. 25. CD 1/4;
Donnelly Constr. Co., Inc., St. Bernard Hy., Chalmette, La., LB $1,226,827 (2nd bidder) Total base bid (St. Bernard, La.).
▲ TENNESSEE—State Hy. Dpt., Nashville.
Tenn.—J. R. Hayes, Paris, Tenn., LB $129,508, bit. materials resurf. 7 mi. State Rte. 76. Proj. SP-1162-A, Henry Co.;
Tenn.—Interstate Constr. Co., Third Natl. Bank Bldg., Nashville, Tenn., LB $267,294, crushed stone and bit. material paving 10.324 mi. State Rte. 11, Proj. F-011-2-(17), Marshall Co.;
Tenn.—Kingsport Paving Co., Kingsport, Tenn., LB $155,457, crushed stone surf. 7.186 mi. Secondary Rte. 2527. Proj. S-2527 (1), Hawkins Co.;
Tenn.—Lehman-Roberts Co., 1098 Wilson St., Memphis, Tenn., LB $470,023, bit. materials wid'n and resurf. 20.18 mi. Proj. SP-1167-A, Shelby and Fayette Counties;
Tenn.—Lillett Brothers, Shelbyville, Tenn., LB $99,365, crushed stone or grav. or chert surf., constr. one concrete box type bridge 5.386 mi. Secondary Rte. 4293. Proj. S-4293 (4), Coffee Co.;
Tenn.—Ralph E. Mills Co., 410 Ann St., Frankfort, Ky. LB $1,555,893, bit. materials paving, constr. sidewalks, concrete parking strips with curbs, storm sewerage sys. widen 3 bridges 7.982 mi. State Rte. 9, Proj. F-009-2-(2), Knox Co.;
Tenn.—Oman Constr. Co., Acklen Park, Nashville, Tenn. LB $1,457,435, grading, drainage, const. 4 box type bridges 8.238 mi. State Rte. 1, Proj. F-001-9-(22), Sullivan Co.;
Tenn.—Anderson-Gregory Co., Sudekum Bldg., Nashville, Tenn., LB $109,412, crushed stone surf. 5.009 mi. Secondary Rte. 4303, Proj. S-4303 (2), Marion Co.;
Tenn.—Bowyer & Johnson, Crook Bldg., Jackson, Tenn., LB $199,456, grav. or chert surf., constr. 3 bridges 5.877 mi. Secondary Rte. 8117. Proj. S-8117-(1), Hardeman Co.; LB $188,804 grav. or chert surf., constr. 2 bridges 6.033 mi. Secondary Rte. 8158, Proj. S-8158-(1), Hardeman Co.; LB $205,138, grav. or chert surf., constr. 3 bridges 9.832 mi. Secondary Rte. 8083, Proj. S-8083 (5), McNairy Co.;
Tenn.—Eatherly Brothers, Carthage, Tenn., LB $128,-787, grav. chert or crushed stone surf., constr. one bridge 4.969 mi. Secondary Rte. 4391. Proj. S-4391 (1), Overton Co.;
Tenn.—Forcum-Lannam, Dyersburg, Tenn., LB $105,105, grav. or chert surf., constr. 2 concrete box type bridges 4.941 mi. Secondary Rte. 8008, Proj. No. S-8008-(6), Dyer and Obion Counties;
Tenn.—G. & R. Coal Co., Williamsburg, Ky., LB $161,071, crushed stone surf., constr. 3 bridges 4.537 mi. sect. Secondary Rte. 4334. Proj. No. S-4334-(1), Fentress and Pickett Counties;
Tenn.—Roadbuilders, 718 Murfreesboro Rd., Nashville, Tenn., LB $198,042, crushed stone and bit. materials paving 2.751 mi. Secondary Rte. 6157, Proj. S-6157 (1), Davidson Co.;
Tenn.—Southern States Paving Co., 900 44th Ave. N., Nashville, Tenn., LB $519,044, bit. materials wid'n. and resurf. 21. 36 mi. State Rte. 6, Proj. SP-1163-A, Lawrence Co.;
Tenn.—Tillett Brothers, Shelbyville, Tenn., LB $322,-436, crushed stone or grav. and bit. materials surf. 6.263 mi. State Rte. 76, Proj. F-047-4-(2) Pt. 1, Stewart Co.; LB $116,520, crushed stone surf., constr. 2 bridges 4.023 mi. sect. Secondary Rte. 4259, Proj. No. S-4259 (4), Warren co.;
Tenn.—Warren Brothers, 1900 Hayes St., Nashville, Tenn. LB $227,926, bit. materials wid'n. and resurf. 9 mi. State Rte. 12, Proj. SP-1165-A, Davidson Co.;
Tenn.—Wesco Paving Co., Airport Rd., Chattanooga, Tenn. LB $903,767, bit. materials resurf. 18.7 mi. State Rte. 2, Proj. No. SP-1166-A, Marion and Hamilton Counties.; LB $270,844, wid'n. and resurf. 10 mi. State Rte. 58, Proj. SP-1168-A, Hamilton Co.;
Tenn.—M. C. West, Columbia, Tenn., LB $83,740, crushed stone surf. 4.433 mi. Secondary Rte. 4388, Proj. S-4388 (1), Clay Co.;
Tenn.—West Tennessee Constr. Co., Alamo, Tenn., LB $179,949, grav. or chert surf. 8.042 mi. Secondary Rte. 8131, Proj. S-8131 (1), Haywood Co.;
Tenn.—cancelled bids to have been opened Jan. 24, grav. and chert and bit. materials surf., constr. 5 bridges 10.262 mi. State Rte. 20, Proj. F-023-2(3), Perry and Lewis Counties. Bids Jan. 24. CD 12/30.

BUILDINGS—LB & CA

▲ The Jordan Co., 1220 2 Ave., Columbus, Ga., CA, $1,430,000, POWELL BLDG. at State Hospital

(Continued on page 60)

A BIG One in Mid-town Manhattan



Socony Mobil Building
New York City

Owner: John W. Galbreath & Company.
Designs by: Harrison & Abramovitz, Architects; John B. Peterkin, Associate.
Structural Engineers: Edwards and Hjorth.
General Contractor: Turner Construction Company.

AMERICAN BRIDGE erects 40,800,000-lb. steel frame for 42-story Socony Mobil building!

Covering a city block in one of the most congested areas of Metropolitan New York, the new 42-story Socony Mobil building, located one block from Grand Central Station on 42nd Street between Lexington and Third Avenues, is the nation's sixth largest office structure.

How American Bridge handled the erection of the 20,000 tons of steelwork which went into the frame of the towering 554' stainless clad skyscraper is a story of careful planning, precision engineering and coordinated timing.

From its fabricating plants, structural steel framework was unloaded and sorted in Greenville, N. J., from where it was barged across the Hudson River to Manhattan where trailer trucks transported it to the building site. The steel was unloaded from trucks parked on busy 42nd Street without interference to traffic, and erected from the ground floor to the fifth-floor level with eight guy derricks. Operating from the fifth floor setback, the building was raised to the fifteenth floor setback, and from there to the roof.

Buildings of this size don't go up often, but American Bridge has the experience and the know-how to give you this same kind of service whenever you need it. For detailed information concerning your construction problems, please contact the nearest office. Or write direct to our Pittsburgh headquarters.

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

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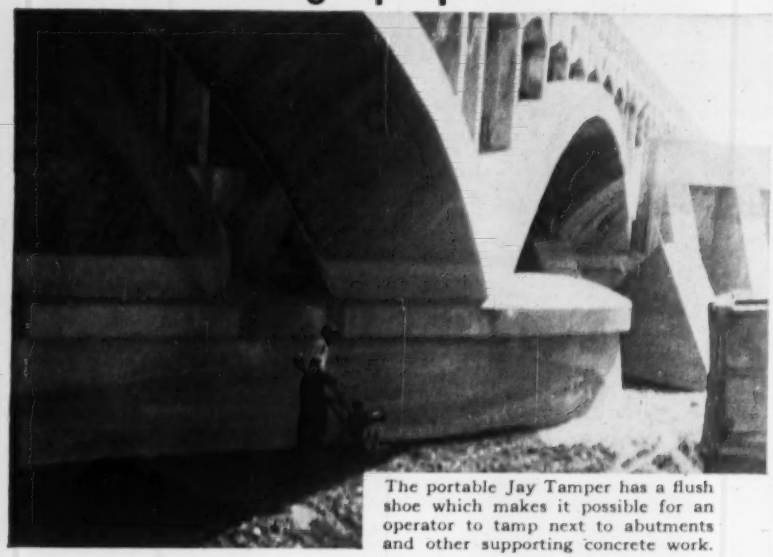
USS

6-87

UNITED STATES STEEL

New, portable earth tamper compacts all backfill on 2½ million dollar Ohio Interchange project



The portable Jay Tamper has a flush shoe which makes it possible for an operator to tamp next to abutments and other supporting concrete work.

All backfill on the 2½-million-dollar Columbus, Ohio, Sandusky Street Interchange was tamped with the new 240-lb. Jay Tamper. Contractor for the project, Visintine & Company, used the 2½-horsepower tamper to keyseat backfill to a solid foundation next to abutments, against foundation walls, around sewers and many other places a roller couldn't reach.

The Jay Tamper travels 60 to 75 feet per minute, delivering more than twenty-five-hundred 1500-lb. impacts per minute. Tests conducted on the cost of tamping against a retaining wall showed that a 5-man air compressor crew cost a contractor 15c per cubic foot — as compared to only 7 mills per cubic foot, with one man operating the Jay Tamper. And the Jay Tamper gives approved uniform proctor densities required by government, state and county engineers.

Why not put the Jay Tamper to work on your job . . . to save you time, money and manpower. You'll find it will pay its own way in big production and cost-saving. Ask your construction equipment dealer about the Jay Tamper — or write to The Jay Corporation, 168 Hosack St., Columbus, Ohio

JAY Corporation
168 HOSACK STREET
COLUMBUS 7, OHIO

(Continued from page 58)

alterations, addns., MILLEDGEVILLE, GA. Dpt. P. Welfare, State Office Bldg., Atlanta, Ga. Bids Dec. 6. CD 10/4.

William A. Berbusse Jr., Inc., c/o Thomas A. Kelly, 340 Royal Palm Way, Palm Beach, Fla. Owner Builds, $800,000, 1 and 2 story, 131x404 ft. PARCEL POST ANNEX and GARAGE, 2100 W. Broward Blvd., FORT LAUDERDALE, FLA. U. S. Post Office Dpt., Atlanta, Ga. Regional Office, lessee. Edmond A. Pachner, Paramount Bldg., Palm Beach, Fla., archt. James N. Borowiski, Murray Bldg., Palm Beach, Fla., engr.

▲ General Electric Co., River Rd., Schenectady, N. Y., CA, Total est. $15,000,000. 156,250 kw. GENERATING UNIT at No. 3 Plant, completion 1956; CA Total est. $25,000,000. 190,000 kw. capacity GENERATING UNIT and addn. at Plant No. 3, completion 1958, GORGAS, ALA. Alabama Power Co., 600 N. 18 St., Birmingham, Ala. CD 9/26.

MIDDLE WEST

BUILDINGS—BA

▲ Wis., Cudahy—HOSPITAL—BA 2/21—Trinity Memorial Hospital Assn., 4728 S. Packard Ave., 4 story, bsmnt. L-shaped, rein.-con., steel, brick hospital. $1,500,000. Grassold-Johnson & Assocs., 734 N. Jefferson St., Milwaukee, Zone 3, archts. CD 5/3.

▲ Wis., Kenosha—SCHOOL—BA 2/28—Regional Diocesan High School, 2000 W. Wisconsin Ave., Milwaukee, Central Catholic High School. $3,000,000. Plans deposit $100. Mark F. Pfaller & Assoc., 7613 W. State St., Wauwatosa, archts. R. J. Strass, 225 E. Michigan St., Milwaukee, struc. engr. CD 3/29.

▲ Wis., Green Bay—CITY HALL—BA 3/1—City, City Hall, 5 or 6 story, 74x160 ft. city hall $1,750,000. Foeller, Schober, Berners, Safford & Jahn, 310 Pine St., archts. CD 4/20.

BUILDINGS—LB & CA

Riverside Homes, Inc., 541 Wallington St., Gary, Ind., Own Forces, $840,000. 65 HOMES HAMMOND, IND.

▲ Owner, c/o Fitch, Shiller, Frank, archts., 100 W. Chicago Ave., Chicago, Ill., Own Forces $2,500,000. 200 HOMES, CHICAGO, ILL.

Birchwood Builders, 911 Busse Hy., Park Ridge, Ill., Own Forces. $950,000. 40 HOMES, DEERFIELD, ILL. Robert E. Boles, 5416 Diversey Blvd., Chicago, Ill., archt.

▲ Howell Constr. Co., Munro Falls, Akron, O. Owner Builds. $3,000,000. Columbia Plaza SHOPPING CENTER, incl. 31 stores, parking facilities, BATTLE CREEK, MICH.

▲ Rossin & Ringlers, 18685 Wyoming St., Detroit 21, Mich., CA, $2,600,000, brick ranch HOUSES, Pottawatomie Woods, GROSSE ILE, MICH. A. G. Elliott & Sons, agt., 815 W. Woodward, Royal Oak, Mich.

▲ Certified Realty Corp., 18135 Seven Mile Rd., Detroit, Mich. Owner Builds. Est. $4,000,000 300 brick ranch HOUSES, Lake Oakland Heights Development, Walton Blvd., Sashabaw Rd., PONTIAC, MICH.

▲ Practical Homes, Inc., 13440 West Seven Mile Rd., Detroit, Mich. Owner Builds. $9,000,000. 285 one story, brick ranch HOMES, 10½ mile road and Jeanerette, SOUTHFIELD, MICH.

WEST OF MISSISSIPPI

BUILDINGS—BA

▲ Tex., Houston—HOSPITAL and PROFESSIONAL—BA 2/21—Memorial Hospital, 602 Lamar St., 13 story, bsmnt. Memorial Hospital and Professional bldg. $3,300,000; 500-auto parking garage. $500,000. Wirtz, Calhoun, Tungate & Jackson, 2506 Richton St., archts. Joe A. Poole & R. L. Reid, 2506 Richton St., engrs. CD 1/25, under LB.

▲ Tex., Tyler — AUDITORIUM — Bids Asked — Jack Dempsey & Bobby Manziel, Tyler, 15,000 seating capacity auditorium, $1,000,000. CD 1/25.

BUILDINGS—SLC

▲ Tex., San Antonio—BANK and OFFICE—National Bank of Commerce, Soledad and Travis Sts., soon lets contract bank and office. $6,750,000. Kenneth Franzheim, 802 Lovett St., Houston, Atlee B. and Robert M. Ayres, 342 W. Woodlawn St., archts. W. E. Simpson Co., 945 Milam Bldg., engr. CD 12/23, under LB.

HEAVY CONSTRUCTION—LB & CA

▲ MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul, Minn.—O. W. Swanson Constr. Co., 550 Snelling Ave. S., St. Paul, Minn. LB $1,084,805. (9 bidders) c. conc. 15.7 mi. between Mustinka River at Wheaton and Jct. TH 55, Traverse Co.;

Minn.—Anderson & Sons, 100 N. Seventh St., Minneapolis, Minn. LB $785,852. (7 bidders) c. conc. 9.1 mi. between Sand Creek in Jordan and 0.8 mi. south of Corporate limits of Shakopee, Scott Co.;

Minn.—Kraus-Anderson of St. Paul, 19 Ramsey St., St. Paul, Minn. LB $751,448. (5 bidders) grade, grav. base, bridges 1.1 mi. near and in Shakopee, Scott Co.;

Minn.—St. Paul Dredging Co., 1397 Laurel Ave., St. Paul, Minn. LB $892,640. (5 bidders) grav. base, hot asph. conc. surf. 2.4 mi. in Duluth, St. Louis Co.;

Minn.—Alley Constr. Co., Faribault, Minn. LB $377,033. (11 bidders) grade, bridge 0.5 mi. in St. Paul between 0.3 mi. south and 0.2 mi. north of Como Ave., Ramsey Co.;

Minn.—Barton Contg. Co., 3115 Hennepin Ave., Minneapolis, Minn. LB $204,170. (8 bidders) grav. base, plant-mixed bit. surf. 19.8 mi. between North Branch and Taylors Falls, Chisago Co.; LB $364,502. (8 bidders) crushed rock base, plant-mixed bit. surf. 18.1 mi. between Rochester and Zumbro Falls, Olmsted and Wabasha Counties;

Minn.—**J. Dieseth Constr. Co.**, Fergus Falls, Minn. LB $198,543. (11 bidders) grading 7.6 mi. between 1 mi. south of Emily and Outing, Cass and Crow Wing Counties;

Minn.—**Hector Constr. Co.**, Caledonia, Minn. LB $257,812 (3 bidders) crushed rock base, plant-mixed bit. surf. 7.8 mi. between Jct. TH 44, south of Caledonia and south State Line (Eitzen), Houston Co.;

Minn.—**Duininck Bros. & Gilchrist**, Olivia, Minn. LB $99,463. (12 bidders) plant-mixed bit. surf. 17.5 mi. between Browns Valley and Jct. TH 117, Traverse Co.;

Minn.—**McCree & Co.**, New York Bldg., St. Paul, Minn. LB $428,588. (5 bidders) c. conc. bit. surf. 10.9 mi. between 11 mi. southeast of East Grand Forks and 0.25 mi. west of Jct. TH 75 north of Crookston, Polk Co.;

Minn.—**Megarry Bros.**, St. Cloud, Minn. LB $104,691. (10 bidders) plant-mixed bit. surf. 13.8 mi. between Lake Itasca Post Office and West Jct. TH 71, etc. Hubbard and Clearwater Counties. Bids Jan. 27. CD 1/12.

▲† **J. F. White Eng. Corp.**, 6999 W. Colfax Ave., Denver, Colo., LB $1,526,029. central heating plant, high temperature hot water distr., Grand Forks Air Force Base, Inv. 25-066-56-49, GRAND FORKS, N. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 25. CD 12/27.

▲† **Peter Kiewit Sons Co.**, 1024 Omaha Natl. Bank Bldg., Omaha, Neb., LB $2,703,969, Schedule 1; LB $2,562,247, Schedule 1A, airfield pavements, Ellsworth Air Force Base, Inv. 25-066-56-31, RAPID CITY, S. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 26. CD 1/5.

▲† **Abel, Dobson & Robinson**, 312 First Natl. Bank Bldg., Lincoln, Neb., LB $1,507,742, Schedule 1, LB $1,508,243, Schedule 1A, addnl. FY '56 airfield pavement, Lincoln Air Force Base, Inv. 25-066-56-33, LINCOLN, NEB. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Jan. 26. CD 1/4.

▲ **OKLAHOMA**—Oklahoma Turnpike Auth., 321 N.E. 24 St., Oklahoma City, Zone 5.

OTA—**Imperial Paving Co.**, 700 E. Grand St., Oklahoma City 3, Okla. CA $732,280, est. $680,612, surf., asph. paving etc., 4.838 mi. Vinita, Contr. 159, Craig Co.;

OTA—**Amis Constr. Co.**, 1647 Exchange St., Oklahoma City 8, Okla., CA $713,686, est. $664,632, surf., asph. paving, etc., 4.536 mi. Vinita, Contr. 161, Craig Co.;

OTA—**Burbank Rock Co.**, Ponca City, Okla., CA $709,622, est. $646,247, asph. paving, etc. 4.541 mi. at Miami, Contr. 162, Ottawa Co.;

OTA—**Hunter Constr. Co.**, Ada, Okla., CA $736,754, est. $664,632, asph. paving, etc. 4.781 mi. at Miami, Contr. 160, Ottawa Co.;

OTA—**Pool Constr. Co.**, Shawnee, Okla., CA $927,043, est. $847,655, surf., asph. paving, etc. 5.817 mi. at Claremore, Contr. 163, Rogers Co.;

OTA—**Dahlgren Constr. Co.**, Commerce Exchange Bldg., Oklahoma City, Okla., CA $813,671, est. $747,389, surf., asph. paving, etc. 5.075 mi. at Claremore, Contr. 164, Rogers Co.;

OTA—**Park-Ward Co.**, Commerce Exchange Bldg., Oklahoma City, Okla., CA $724,209, est. $665,116, surf., asph. paving, etc. 4.671 mi. at Bit. Cabin, Contr. 165, Mayes Co. Grand total $5,357,265. Bids Jan. 24, awarded Jan. 25. CD 12/28.

▲ **Holder Constr. Co.**, Snyder, Tex., CA $1,500,000. 102 mi. 6 in. crude line, Big Springs to Abilene, TEXAS, Cosden Petroleum Corp., R. L. Tollett, Abilene, Tex. CD 9/30.

BUILDINGS—LB & CA

▲ **Northern States Power Co.**, 15 South 5 St., Minneapolis, Minn., Owner Builds $1,500,000. SUB-STATION and outlet facilities, Dayton's Bluff, ST. PAUL, MINN.

▲ **J. W. Bateson Co.**, Gibraltar Life Bldg., Dallas, Tex. LB $4,528,544, est. $4,837,486. (6 bidders) construct and finance, 400 family HOUSING units, Whiteman Air Force Base, SEDALIA, MO. U. S. Eng., Federal Office Bldg., Kansas City, Mo. Bids Jan. 26. CD 12/23, under Airports.

▲ **M. K. Eby Constr. Co., Inc.**, 610 N. Main St., Wichita, Kan. CA $1,749,816. construct and finance army family HOUSING, CIVENG-23-028-56-43, FORT RILEY, KAN. U. S. Eng., Federal Office Bldg., Kansas City, Mo. CD 1/9, under LB, Public Buildings.

▲ **L. R. Foy Constr. Co.**, Hutchinson, Kan. LB, $1,067,157. JUNIOR HIGH SCHOOL, HUTCHINSON, KAN. Reno County School Dist. 1, Hutchinson, Kan. Bids Jan. 10. CD 12/16.

▲ **C. H. Leavell & Co.**, 1900 Wyoming St., El Paso, Tex. and **Dan R. Ponder, Inc.**, 327 Morgan Ave., El Paso, Tex. LB $12,493,974, est. $13,060,000. construct, manage, finance, 944 HOUSING units, Abilene Air Force Base, ABILENE, TEX. Base Procurement Office, Carswell Air Force Base, Fort Worth, Tex. CD 4/15.

▲ **S. O. & C. D. Yarbrough Constr. Co.**, Box 851, Austin, Tex., LB $2,541,962 (3 bidders) general constr. Kinsolving DORMITORY, 6, 5 and 1 story unit superior constr. dormitory, AUSTIN, TEX. University of Texas, Bd. Regents, 104 Main Bldg., Austin, Tex. Bids Jan. 24, CD 12/14;
A. J. Monier & Co., 1446 N. Flores St., San Antonio, Tex., LB $772,600, plumbing, heating, ventilating, air-conditioning (Austin, Tex.).

▲ **R. P. Farnsworth & Co., Inc.**, 1515 S. Salcedo St., New Orleans, La., CA Total est. $14,000,000. 42 story OFFICE bldg. and 28 story Sheraton Dallas HOTEL, foundations and sub-surface retaining walls, DALLAS, TEX. Southland Life Insurance Co., Southland Life Bldg., Dallas Tex. CD 4/27/54, under Commercial Bldgs. and Industrial Bldgs., and CD 1/11, under Sheraton Hotel, as owner;

5 reasons for specifying AND USING SERVICISED® KORK-PAK premolded joint filler

1. Non-extruding
2. Recovers more than 80% of original thickness after compression
3. Low moisture absorption
4. Readily handled without breakage
5. Least expensive non-extruding type

KORK-PAK—an exclusive Servicised development—is composed of cork granules bonded together with asphalt between two sheets of heavy asphalt saturated paper. Available in ¼", ⅜", ½", ¾" and 1" thicknesses, widths to 36", and standard lengths of 5 or 10 feet. Longer lengths supplied on special order.

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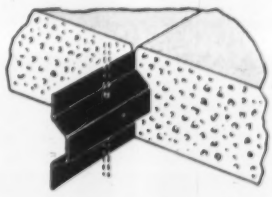
★ **Forms an easily compressible cushion**
★ **Highly waterproof**
★ **Low in cost**

A composition of asphalt, vegetable fibre and a small percentage of finely divided mineral filler formed between two sheets of asphalt saturated paper which increases strength and rigidity and improves handling. Available in ¼", ⅜", ½", ¾" and 1" thicknesses, widths to 36" and standard lengths of 5 or 10 ft.

TONGUE AND GROOVE JOINT



★ **Provides quick, low-cost tongue and groove joint for keyed slab construction**
★ **Rigid . . . easy to handle and install**

Servicised Tongue and Groove Joint consists of a high grade asphalt mastic core formed between sheets of heavy asphalt saturated paper. It is waterproof, non-extruding and extremely durable. Supplied with punching for dowel bars and stake pins. Available without punching. Standard length 10' 2"; widths from 4½" to 10½" in 1" increments; thickness ⅛". Standard widths listed are for slabs from 5" to 11" thick.

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FAR WEST

HEAVY CONSTRUCTION—LB & CA

▲† **Gibbons & Reed Co.**, 825 West 9 North, Salt Lake City, Utah, LB $2,240,492, Schedule A, LB $2,144,818, Schedule B, apron parking, HILL AIR FORCE BASE, UTAH. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Bids Jan. 25. CD 1/10.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles,

Guy F. Atkinson Co., Box 593, South San Francisco, Calif., LB, $2,062,928 (5 bidders) paving, steel bridge, 3 rein.-con. bridges, Sign Rte. 94 between Wabash Freeway and 0.6 mi. east of Euclid Ave., San Diego Co. Bids Jan. 26. CD 1/3.

CANADA

BUILDINGS—SLC

▲ **Alta., Calgary** NURSES' RESIDENCE—Holy Cross Hospital, Calgary, soon lets contract rein.-con. student nurses' residence $1,000,000. Green, Blankstein, Russell & Assocs., 222 Osborne St. N., Winnipeg, Man., archts.

HEAVY CONSTRUCTION—LB & CA

▲ **Dutton-Williams Bros. Ltd.**, Hy. No. 16, Edmonton, Alta., CA $1,250,000. 31 mi. 10-in. gas pipe line from Alexander Field to Lake Wabamun Lake Saskatchewan, ALBERTA. Midwestern Industrial Gas Ltd., 108 Thomson Bldg., Edmonton, Alta. Awarded Jan. 17. CD 1/10.

Grey County Council, Carmen Werry, warden, Owen Sound, Ont., Own Forces, $590,000. roads and bridges, OWEN SOUND, ONT. J. H. Beatty Court House, Owen Sound, co. engr.

BUILDINGS—LB & CA

▲ **Morris Constr. Co. Ltd.**, Morris Tabachanick, vice pres., Windsor, Ont., Owner Builds. $6,500,000. 550 HOUSES, Sandwick West Twp. and suburb of WINDSOR, ONT.

▲ **Lavallee & Frenette**, Lilas St., Quebec City, Que. CA $3,000,000, 200 homes in HOUSING program, LEVIS, QUE. La Co-operative d'Habitation d'Aubigny, c/o 59 Desjardins St., Levis, Que. Awarded Jan. 11.

LATIN AMERICA

BUILDINGS—LB & CA

▲ **GIE** (Gruppo Industrie Elettromachanica per Impianti all'Estero), Milan, Italy, CA Est. $12,000,000. THERMAL POWER STATION, PUERTO CABELLO, VENEZUELA. Venezuela Development Corp., Caracas, Venezuela.

PROPOSED PROJECTS

WATER SUPPLY

▲ **N. Y., Syracuse**—Onondaga County Water Auth., Syracuse, water systems, pumping stations, water storage, $2,000,000. O'Brien & Gere, 400 E. Genesee St., Syracuse, Zone 2, consult. engrs. Bids early in the Summer.

SEWERS, WASTE DISPOSAL

▲ **Calif., San Diego** City, Civic Center, sewage disposal plant and ocean outfall at Imperial Beach, $26,800,000. Bond election may be held June 8.

▲ **Colo., Derby**—South Adams County Water & Sanitation Dist., 6595 E. 7 Ave., Derby, bond election Mar. 13, sewerage sys. imprvs. $2,000,000. Ripple & Howe, 833 25 St., Denver, Zone 5, consult. engrs.

▲ **Ill., Danville** City, City Hall,, sewage treatment plant, sewerage sys. $4,000,000. Consoer, Townsend & Assocs., 351 E. Ohio St., Chicago, Zone 11, consult. engrs; storm sewers and channel imprvs. $1,500,000. CD 11/2/51.

▲ **Iowa, Burlington** City, City Hall, sewage plant, $2,500,000. Consoer, Townsend & Assocs., 351 E. Ohio St., Chicago, Ill., and Federal Eng. Co., 703 Putnam Bldg., Davenport, Iowa, consult. engrs. H. A. Vollmer, Burlington, city engr.

▲ **Tex., San Antonio**—City, City Hall, sanitary sewers, $2,250,000, V. L. Beavers & Assocs., Transit Tower, Hugh Dickson, 531 Topeka St. W. E. Haggard, N. Vandiver Rd., Frank Drought, 342 W. Woodlawn St., and Irving S. Seligmann, Kallison and Walsh Bldg., consult. engrs.; storm sewers, $2,750,000, Gullat, Lodel & Assocs., Transit Tower, Mitchell & Hunt, Transit Tower, and Terrell Bartlett Engineers, Bedell Bldg., consult. engrs. CD 12/5.

BRIDGES

▲ **Wis., Milwaukee**—City, City Hall, 1,000 ft. rein-con., steel piling Lincoln Ave. Viaduct. $2,000,000. Geo. C. Ashton, br. engr. Lloyd D. Knapp, city engr. CD 12/3/43.

STREETS AND ROADS

▲ **Mich., Detroit**—City, Glenn C. Richards, comr., City-County Bldg., road paving program, $22,000,000, M. F. Wagnitz, city engr.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

construction

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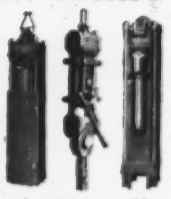

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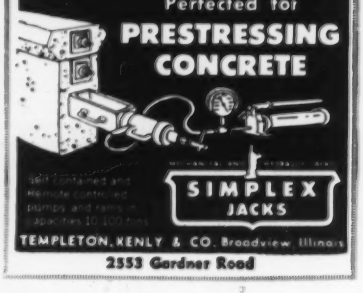

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2553 Gardner Road

Rockland Co.—2½ mi. connecting road to link New York State Thruway with Garden State Parkway at New York-New Jersey border near Montvale, N. J. $4,300,000.

▲ **Tex., San Antonio**—City, City Hall, street imprvs., paving, $3,952,000. Beretta, Greenslade, Clark & Collins, Travis Bldg., W. F. Castella & Assocs., 1211 W. Hildebrand St., Earl J. Wentworth, 3920 Broadway, Donoho & Cross, Travis Bldg., Reynolds Andricks, Milam Bldg., and M. L. Diver, 1104½ N. Main St., consult. engrs. CD 12/5.

AIRPORTS

▲† **Fla., Homestead**—PERSONNEL HOUSING—Base Contg. Co., Homestead Air Force Base, Homestead, plans by Norman M. Giller & Assocs., consult. engrs.-archts., 420 Lincoln Rd., Miami Beach, 1,570-unit married personnel housing, Homestead Air Force Base. $21,000,000.

▲ **Wash., Spokane**—AIRPORT—City, City Hall, 2 addnl. runways, air terminal bldg., aircraft parking and loading apron, taxiways, water mains, sewers, etc. Geiger Field Municipal Airport. $4,250,000. To be constructed during next 10 years.

LATIN AMERICA

▲ **Chile, Santiago**—Anaconda Copper Co., Santiago and Chuquicamata, plans copper mining plant expansion at Chuquicamata. $36,000,000.

▲ **Mexico, Monclova**—Altos Hornos de Mexico, Monclova, Mexico, and V. Carranza 25, Mexico City, plans 2,000-ton daily iron smelter and 45-mi. ore carrying railway. $10,000,000.

▲ **Mexico, Vera Cruz**—Mexican Federal Govt., c/o P. Wks. Dpt., Mexico City, provide irrigation facilities for 617,500 acres in State of Vera Cruz. $10,000,000.

PUBLIC BUILDINGS

▲ **Calif., Chino**—TRAINING SCHOOL—State Div. Architecture, 1120 N St., Sacramento, new Youth Training School, Dpt. Youth Auth. $6,278,300. Bids in December.

▲ **Calif., Los Angeles**—SCHOOL—Bd. Educ., 1425 S. San Pedro St., plans by Rowland Crawford, 1464½ S. Doheny Dr., Beverly Hills, Junior High School, Chatsworth St. and Densmore Ave. $2,000,000. CD 4/8.

▲ **Calif., Los Angeles**—OFFICE—State Div. Architecture, 1120 N St., Sacramento, branch office bldg., Dpt. Employment. $2,450,000. Bids in March.

▲ **Calif., Soledad**—CELL—State Div. Architecture, 1120 N St., Sacramento, cell bldgs., Soledad State Prison, State Dpt. Corrections. $6,676,900. Bids in May. CD 9/29/54.

▲ **Colo., Grand Junction**—SCHOOL, etc.—State of Colorado, State Home & Training School, Grand Junction, combined school and auditorium, gymnasium, 30-bed hospital and 2 adjoining infirmary wards, 4 wards and maintenance shop bldg. $2,140,000. CD 4/6.

▲ **Colo., Pueblo**—HOSPITAL EXPANSION—State of Colorado, 13 and Francisco Sts., plans by Earl Chester Morris, 122 E. 19 Ave., Denver, and Thomas & Sweet, 222 E. Bijou St., Colorado Springs, State Mental Hospital expansion, incl. new out-patient unit, administration bldg., 540-bed infirmary, two chapel-recreation centers, two 300-bed patient bldgs., 4 bldgs. $19,035,000. Walte DeMordaunt, 738 Thatcher Bldg., consult. engr. CD 10/18/51.

▲ **Colo., Walsenburg**—PLANT—City, City Hall, Walsenburg, oil-coal plant. $11,500,000. Sam Robinson, 446 Equitable Bldg., Denver, consult. engr. Catarco, Inc., Denver, lessee.

▲ **Del., Wilmington**—SCHOOL—Alfred I. du Pont Special School, 3606 Concord Pike, plans by G. Morris, Whiteside 2nd, Wm. G. Moeckle, & Joseph E. Carbonell Jr., 909 Tatnall St., Junior High School. $2,000,000. CD 12/19.

▲ **Iowa, Iowa City**—MEMORIAL UNION ADDN.—State Bd. Regents, State Office Bldg., Des Moines, Memorial Union Bldg. addn., University of Iowa. $3,500,000.

▲† **Kan., Fort Leavenworth**—ACADEMIC—U. S. Eng., Federal Office Bldg., Kansas City, Mo., plans by Kivett & Myers & McCallum, 1016 Baltimore St., Kansas City, Mo., academic bldg. $5,000,000. CD 10/31/46.

▲ **Ky., Louisville**—HOUSING—Louisville Municipal Housing Auth., 200 W. York St., plans by Hartstern, Louis & Henry, McDowell Bldg., housing, western section of Louisville, partly slum clearance, $7,000,000. E. R. Ronald & Assoc., 544 S. Third St., consult. engrs. CD 1/12.

▲ **Mich., Detroit**—ART INSTITUTE—City, Detroit Institute of Arts, 5200 Woodward Ave., Detroit, plans by Suren Pilafian, 153 E. Elizabeth St., Detroit, art institute. $2,160,000. CD 1/25.

▲ **Mich., Detroit**—COURT—City of Detroit Recorders Court, Municipal Court Bldg., 1321 St. Antoine St., Zone 26, municipal court bldg. addn. $2,000,000. Milton F. Wagnitz, 528 City-County Bldg., Zone 26, city engr.

▲ **Mich., East Lansing**—STUDENT ACTIVITIES—State, A. N. Langius, dir. State Bldg. Dpt., Lewis Cass Bldg., 300 S. Walnut St., Lansing, student activities bldg., Michigan State University. $2,225,000.

▲ **Mich., Wayne**—SCHOOL—Bd. of Educ., Wayne Twp., 34918 Sims St., Wayne, $9,000,000 bond election Feb. 20, schools.

▲ **Mo., Columbia**—DORMITORY—Curators of the University of Missouri, Dale O. Bowling, bus. mgr., Jesse Hall, Columbia, dormitory. $12,000,000. CD 9/15.

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▲ **Mo., Mount Vernon**—HOSPITAL—Missouri State Sanatorium, c/o Supt., Mount Vernon, 4 story hospital addn., chapel, medical library, classroom bldg., pediatrics and out-patient department bldgs. $2,000,000.

▲ **Neb., Lincoln**—CITY-COUNTY—City of Lincoln, City Hall, and Lancaster County, Court House, city-county bldg. $2,000,000. Carl Fisher, city engr. CD 10/21/48.

▲ **N. Y., Helmuth**—MEDICAL SURGICAL—Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, plans by Gehron & Seltzer, 101 Park Ave., New York, Zone 17, medical-surgical bldg. at Gowanda State Hospital, $6,000,000. CD 3/16/55.

▲ **N. Y., New York**—MEDICAL EXAMINERS OFFICE—Dpt. P. Wks., Municipal Bldg., Zone 7, plans by DeYoung, Moscowitz & Rosenberg, 205 E. 42 St., Zone 17, Proj. CME-1, office of Chief Medical Examiner and related facilities in Bellevue Hospital Group, vicinity 31 St. and FDR Dr. $2,600,000. To go ahead in 1957. CD 10/19/44.

▲ **N. C., Raleigh**—HOUSING—Raleigh Housing Auth., L. L. Vaughan, chmn. Halifax Ct., plans by F. Carter Williams, 133 Fayetteville St., and Wm. Henley Deitrick & John C. Knight & Assocs., 115 W. Morgan St., 300-unit Negro Housing, 25-acres, south of Lee St., east of Walnut St., north of Hoke St., and west of right-of-way line on Hy. 70 and 15-A. $3,000,000.

▲ **O., Cleveland Heights**—SCHOOLS—Bd. Educ., 1749 Lee Rd., Cleveland, Zone 18, plans by Spahn & Barnes, 1950 Lee Rd., Cleveland Heights, Zone 18, and Outcalt, Guenther & Assocs., 13124 Shaker Square, Cleveland, Zone 20, schools. $5,000,000. CD 11/11.

▲ **R. I., North Kingston**—HIGH SCHOOL—Town, Bd. Educ., North Kingston, plans by Warren H. Ashley, 967 Farmington Ave., West Hartford, Conn., Senior High School. $2,250,000. Marchant & Minges, 1007 Farmington Ave., West Hartford, Conn. consult. engrs. CD 8/11.

▲† **Va., Fort Eustis**—HOUSING—U. S. Eng., foot of Front St., Norfolk, Zone 1, 600-family housing units. $8,100,000. Bids in July 1956.

▲† **Va., Fort Lee**—HOUSING—U. S. Eng., foot of Front St., Norfolk, Zone 1, 500-family housing units, $6,750,000. Bids in July 1956.

▲ **Va., Norfolk**—HOSPITAL WING—Norfolk General Hospital, Raleigh Ave., plans by Vernon A. Moore, 716 W. 20 St., 9 story first wing of hospital. $4,000,000. Samuel Hannaford & Sons, Dixie Terminal Bldg., Cincinnati, O., assoc. archts. Watson & Hart, 2503 Llewllyn Ave., consult. engrs. Bids about Apr. 12. Bids to be advertised about Jan. 28. CD 12/10/54.

▲† **Wash., Fort Lewis**—BARRACKS—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, 10 barracks, $6,096,000. Bids late this year. CD 11/7/51.

▲ **Wis., Lake Geneva**—HIGH SCHOOL—Lake Geneva-Genoa City Union High School Dist., 738 Main St., plans by Fritz von Grossmann, 4630 W. Burleigh St., Milwaukee, high school. $2,157,570.

▲ **Que., Quebec City**—POST OFFICE—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., plans by Robert Blatter & G. Fernand Caron, 144 St. John St, 6 story, bsmnt., 130x310 ft. post office, Henderson St. Over $2,000,000. David D. Clark, 322 Laurier Ave., consult. engr. CD 11/11.

COMMERCIAL BUILDINGS

▲ **Calif., San Rafael**—SHOPPING CENTER, etc.—Land Development & Investment Co., c/o Morris Stulsaft, 405 Montgomery St., San Francisco, shopping center, apartment houses and several hundred homes, near here, $45,000,000. CD 1/18.

▲ **Colo., Colorado Springs**—SHOPPING CENTER—Southgate Shopping Center, 152 Mesa Ave., plans by Carlisle, B. Guy, 601 Mining Exchange Bldg., shopping center, incl. 30 stores. $5,000,000.

▲ **Ill., Chicago**—LAW SCHOOL—University of Chicago, Midway Campus, plans by Eero Saarinen, Bloomfield Hills, Mich., law school. $3,500,000.

▲ **Ind., South Bend**—DORMITORY, etc.—Notre Dame University, South Bend, plans by Ellerbe & Co., E-First Natl. Bank Bldg., St. Paul, Minn., dormitory and gymnasium, $2,500,000. CD 5/23/47.

▲ **N. Y., New York**—OFFICE—575 Lexington, Inc., 521 Fifth Ave., Zone 17, plans by Sylvan Bien, 33 W. 46 St., Zone 19, 34 story office, 575-589 Lexington Ave. and 142-144 E. 52 St. $12,000,000.

▲ **N. Y., New York**—OFFICE—Kleban Realty & Constr. Corp., 430 Park Ave., Zone 17, plans by Emery Roth & Sons, 575 Madison Ave., Zone 22, 22 story office, Park Ave. and 55 St. $2,000,000. To go ahead in Summer of 1956.

▲ **O., Columbus**—HOMES—Frank Brown & Allied Development Corp., c/o Robert Weiler, 175 S. High St., 121 1½-story, bsmnt., frame, homes, Yearling Rd. $2,250,000.

▲ **O., Fairview Park**—HOMES—Valley Forge Home Development, Peter Sepper, Jr., pres., 21565 Lorain Ave., Cleveland, Zone 26, 200 brick, stone, timber ranch houses, 120-acre site south of Lorain Rd. and east of W. 210 St. $10,000,000.

▲ **O., North Eaton**—HOMES—R. A. Gail Realty Co., 4815 Pearl Rd., Cleveland, Zone 9, 300 prefabricated homes, incl. water and sewage sys., Hawke Rd. $4,000,000.

▲ **O., Toledo**—RELIGIOUS-RECREATION COMMUNITY—First Church Unity, Rev. Wallace H. Tooke, 2740 Upton Ave., non-denominational community, religious and recreation center, to incl. Unity Temple, chapel, series of connecting structures to house recreation area, library, audio center, lounges, parking for 500-cars, swimming pool, sun terrace, play areas, picnic area,

etc., at 3433 Secor Rd. $5,000,000. Vogt, Ivers, Seaman & Assocs., 34 W. 6 St., Cincinnati, consult. engrs. for church.

▲ **Tex., Fort Worth** — SCHOOL — Southwestern Baptist Theological Seminary, Seminary Hill, plans by Wyatt Hedrick, 1200 T & P Bldg., Easterwood & Easterwood, 512 N. P. Anderson Bldg., school enlargement, incl. 500-student living units; school of theology, student union bldg., nursery and clinic. $5,000,000. CD 10/6/48.

▲ **Tex., Houston**—OFFICE, etc.—Alexander Hamilton Life Insurance Co., c/o Sam Field, 6016 Humble Rd., 27 story office, $4,500,000; auto parking garage, $375,000, Main, Holcombe, Fannin and Kingsley Ave.

▲ **Tex., Mesquite**—DWELLINGS, etc.—Danna Constr. Co., 4922 Greenville Ave., Dallas, 30 dwellings, $369,750; 28 dwellings, $362,500; 32 dwellings, $376,400; 35 dwellings, $385,000; 25 dwellings, $350,000; shopping center, $2,500,000.

▲ **Va., Arlington**—HOSPITAL WINGS—Arlington Hospital, 5129 16th St. N., plans by Walton Assoc., 2049 N. 15 St., addnl. wings. $2,500,000.

▲ **Wis., Racine**—Y.M.C.A. BLDG.—Young Men's Christian Assn., 217 Fourth St., Y.M.C.A. bldg., $2,000,000.

▲ **Hawaii, Honolulu**—HOTEL—Kaiser Community Homes, 1124 Broadway, Oakland, Calif., plans by Welton Becket & Assocs., 5657 Wilshire Blvd., Los Angeles, Calif., and Edwin L. Bauer, Honolulu, Hilton Hawaii Kai Hotel, 22 story, at Waikiki Beach, Kalia and Ala Moana Blvd., incl. 5 swimming pools, dock, lagoon and parking areas. $10,000,000.

▲ **N. S., Halifax**—HOTEL WING—Lord Nelson Hotel, South Park, Halifax, plans by C. D. Davison & Co., 95 Dresden Row, 12-15 story 170-suite hotel apartment wing, $2,000,000.

▲ **Ont., Sarnia**—HOUSING—Kemsley Constr. Ltd., 1190 Errol St. E., 400 houses, Murphy Rd. $4,000,000.

INDUSTRIAL BUILDINGS

▲ **Calif., Huntington Beach**—GENERATING UNITS—Southern California Edison Co., 601 W. 5 St., Los Angeles, two 200,000 kw generating units for steam electric power plant on Santa Ana River, $60,000,000.

▲ **Fla., Miami**—PLANT—General Portland Cement Co., 111 W. Monroe St., Chicago, Ill., cement plant, 2,490 acre-tract 19 mi. west of here. $10,000,000.

▲ **Ill., Joliet**—FACTORY—Caterpillar Tractor Co., East Peoria, plans by Lyle De Witt, Decatur, Ill., factory addn., incl. 400,000 sq. ft. parts bldg. addn., 300,000 sq. ft. Building W; 2 story office bldg. addn. $6,000,000. Associated Engineers; 1 Natl. Bank Bldg., Peoria, consult. engrs.

▲ **Iowa, Council Bluffs**—LIGHT and POWER PLANT—Iowa Power & Light Co., 832 Walnut St., Des Moines, light and power plant expansion, incl. generating equip., building work and wiring, etc. $13,000,000. CD 8/24/51.

▲ **La., Baton Rouge**—PLANT—Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland, Calif., caustic-chlorine plant adjacent to alumina plant at Gramercy, $8,000,000. CD 12/6.

▲ **La., Baton Rouge**—PLANT—Naugatuck Chemical Div., United States Rubber Co., 1230 Avenue of Americas, New York 20, N. Y., chemical plant to mfg. plastics, $5,000,000. Constr. will start at once.

▲ **La., Shreveport**—WAREHOUSE—Childs Grocery Co., (Kroger Food Store Chain, parent owner), Jacksonville, Tex. 247,000 sq. ft. warehouse, $2,000,000.

▲ **Md., Dickerson**—GENERATING STATION—Potomac Electric Power Co., 929 E St. N. W., Wash. 4, D. C., steam generating station.

▲ **Mich., Detroit**—RESEARCH CENTER—Parke, Davis & Co., Harry J. Loynd, pres., Joseph Campau St., plans by Skidmore, Owings & Merrill, 100 W. Monroe St., Chicago, Ill., medical research center, in or near here. $10,000,000. CD 12/9/52.

▲ **Mich., Novi (Wixom)**—PLANT—Lincoln Div., Ford Motor Co., Ben D. Mills, vice pres., 6200 Warren St., Wayne, 1,500,000 sq. ft. assembly plant and general office, 325 acre site, Farmington-Brighton Expressway, Grand River intersection, $25,000,000.

▲ **N. J., Carteret**—PLANT—Hudson Pulp & Paper Co., 477 Madison Ave., New York 22, N. Y., plans by David Levy, 70 E. 45 St., New York 17, N. Y. paper cup and container plant, on 9-acre tract near New Jersey Turnpike, $2,000,000.

▲ **N. Y., Buffalo**—GENERATING UNIT—Niagara Mohawk Power Corp., 300 Erie Blvd. W., Syracuse, Zone 2, 200,000 kw generating unit addn. to Charles R. Huntley steam-electric station, $30,000,000.

▲ **N. Y., Huntington**—POWER STATION—Long Island Lighting Co., 250 Old Country Rd., Mineola, electric power station, $30,000,000.

▲ **O., Clarington**—PLANT—Olin Mathieson Chemical Corp., 460 Park Ave., New York, N. Y., alumina plant, reduction plant, rolling mill, near here. Site selected. $90,000,000 CD 12/13/55, under W. Va., Moundsville.

▲ **O., Richmond Heights**—RESEARCH CENTER—General Electric Co., River Rd., Schenectady, N. Y., plans by Giffels & Vallet, Inc., 1000 Marquette Bldg., Detroit, Mich. 1 story, brick, masonry glass research center for Lamp Div., 776 acre site, south of Highland Rd., east of Hilltop Rd. $2,000,000.

▲ **Okla., Miami**—FACTORY—B. F. Goodrich Co., Miami, tire plant expansion for mfg. large off-the-road tires. $4,000,000.

▲ **Pa., Monaco**—PLANT—St. Joseph Lead Co., 250 Park Ave., New York, N. Y., and Pittsburgh Consolidated Coal Co., Koppers Bldg., Pittsburgh, 66,000 tons per year aluminum plant at Josephtown, $18,000,000.

▲ **Texas**—PLANT, etc.—Tennessee Gas Transmission Co., Commerce Bldg., Houston, plant, $2,500,000; refractionating plant unit, $750,000; underground gas storage tanks, $750,000 at Barbours Terminal, near Houston.

▲ **Wash., Hoquiam**—PLANT—Rayonier, Inc., Hoquiam, wood chipping plant for pump and paper mill. $3,250,000. CD 1/17/50.

▲ **W. Va., Moundsville**—PLANT—Cresap Generating Corp. (Olin-Mathieson Chemical Corp.), 450 Park Ave., New York, N. Y. and Pittsburgh Consolidation Coal Co., Library St., Pittsburgh, Pa., two 225,000 kw. units Kammer Plant at Cresap Bottom, $30,000,000. American Gas & Electric Co., 30 Church St., New York 8, N. Y., consult. engr. CD 12/13.

UNCLASSIFIED

▲ **N. Y., Yonkers**—RACEWAY CLUBHOUSE, etc.—Yonkers Raceway, Inc., Yonkers Ave., plans by Leon & Lionel Levy, 158 E. 35 St., New York 16, N. Y. clubhouse, present grandstand remodeling and extens., demolition of barns and constr. addnl. parking space at harness racing track. $14,000,000.

▲ **Ohio**—RAILROAD TRACK—Pennsylvania R. R., S. R. Hursh, ch. engr., Suburban Station Bldg., 1617 Pennsylvania Blvd., Phila. 4, Pa., extending track to Omal near Clarington to service Olin Mathieson aluminum plant. $2,000,000.

▲ **Texas**—PRODUCTS PIPE LINE—Tennessee Gas Transmission Co., Commerce Bldg., Houston, products pipe line from Banquette, west of Corpus Christi to Barbours Terminal, near Houston, $10,000,000.

▲ **Tex., San Antonio**—GAS, ELECTRIC—City P. Service Bd., Navarro and Villita Sts., 1956 Construction: reworking gas pipes with cathodic protection, $119,000; rerunning old service (gas pipe), $215,000; extend gas belt lines, $152,000; replace corroded gas mains, $158,000; services and lines from gas mains to customers, $540,000; furnish, install gas meters, $260,000; laying natural gas lines to areas of new subdivisions or new customers' area, $800,000; enlarge 10th Street Electric Sub-Station, $200,000; extend and work on 69,000-volt sub-station, $239,000; extend and work on 138,000-volt electric sub-station, $275,000; electric distribution transformers, $2,000,000; overhead electric lines, $1,515,000; underground electric distribution cable lines, $5,852,840.

▲ **Ontario**—OIL PIPE LINE—Interprovincial Pipe Line Co., 50 King St. W., Toronto, oil pipe line from Sarnia to Port Credit, $10,000,000-$13,500,000.

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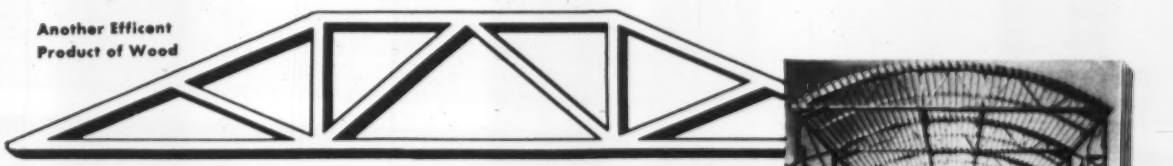

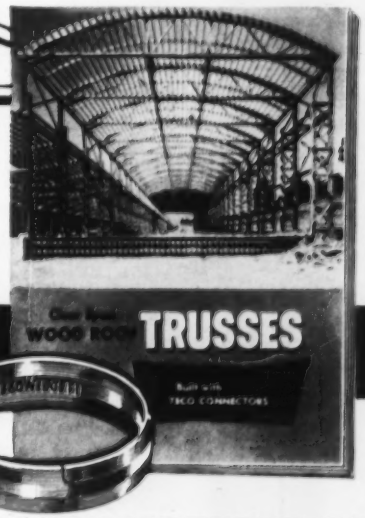

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NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 15 Maine — February 20 Connecticut
STREETS AND ROADS
February 14 Massachusetts — February 17 Vermont
February 20 Connecticut

† Massachusetts—AAA FACILITIES—BA 2/14—U. S. Eng., 857 Commonwealth Ave., Boston, Special AAA facilities Beverly Airport, Brimball Hill Reservoir, ENG-19-016-56-92, $800,000-$900,000. Plans deposit $50. Spector & Montgomery, Falls Church, Va., archts. Fay, Spofford & Thorndike, 11 Beacon St., Boston, engrs. Leon Chatelain, Jr., 1632 K St. N. W., Wash., D. C., engr. CD 1/8.

▲† R. I., Davisville—MARGINAL WHARF—BA 2/24—First Naval Dist., 495 Summer St., Boston, Mass., marginal wharf, incl. 2 railroad tracks, Naval Construct Battalion Center, NOY89974, Spec. 47524, $4,000,000. Plans deposit $30. Jenks & Ballou, Industrial Trust Bldg., Providence, R. I., engrs. CD 8/11/54, under Public Buildings.

BUILDINGS—BA

▲ Mass., Boston—OFFICE, etc.—BA 2/16—George Robert White Fund, City Hall, office and stores, 480 Boylston St. $1,000,000. Plans deposit $100, refundable. Thomas F. McDonough, 25 Huntington Ave, archt. CD 9/27.

▲ Mass., Framingham—SCHOOL—BA 2/20—Town, School Bldg. Comn., c/o Supt. Schools, Union Ave., Framingham High School, Walnut St. $1,800,000. Plans deposit $150, refundable. Samuel Glaser Assoc., 105 Newbury St., Boston, engrs.-archts. CD 12/21/54.

▲ Conn., Hartford—SCHOOL—BA 2/28—Hartford Bd. Educ., 249 High St., elementary school, New Britain Ave. $1,600,000. Plans deposit $100. Keith S. Heine, 71 Oxford St., Hartford, archt. R. W. Loomis, 32 Maple Ave., Windsor, engr. CD 5/11.

▲ Mass., East Bridgewater—SCHOOL—BA 3/1—Town, High School Bldg. Comn., c/o Supt. Schools, 4 North Bedford St., high school, Plymouth St. $1,500,000. Plans deposit $50, refundable, Perry, Shaw, Hepburn, Kehoe & Dean, 31 St. James Ave., Boston, archts. CD 5/27/53.

▲ Mass., Holliston—SCHOOL—BA 3/1—Town, School Dpt., Fred W. Miller, supt., constr. Junior and Senior High School, Linden and Woodland Sts. $1,300,000, Charles H. Cole II, 55 Waltham St., Lexington, archt. CD 12/6/54.

HEAVY CONSTRUCTION—LB & CA

▲ NEW HAMPSHIRE—Dpt. P. Wks. & Hys., Concord, Manchester Sand, Gravel & Cement Co., Inc., P. O. Box 536, Manchester, N. H., CA, $1,167,522. road mix hy. 0.757 mi. and four 3-span steel beam bridges, F. E. Everett Turnpike Manchester. Bids Dec. 22, awarded Jan. 16. CD 12/29, under LB.

▲ MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
J. F. White Contg. Co., Westwood, Mass. LB $2,633,633. hy. relocation, Bourne-Plymouth. Bids Jan. 31. CD 1/5.

▲ CONNECTICUT—State Hy. Dpt., State Office Bldg., Hartford,
William M. Moore Bldg. Corp., 75 W. 190 St., New York, N. Y. and Lopier Constr. Co., 210 E. 40 St., New York, N. Y., LB $2,562,703. Proj. 317-20, substructure main portion Quinnipiac River Bridge, New Haven. Bids Jan. 30. CD 1/11.

BUILDINGS—LB & CA

▲ Consolidated Constructors, Inc., 807 Congress St., Portland, Me. CA $1,113,000, est. $1,100,000. OFFICE and BANK, Congress and Temple Sts., PORTLAND, ME. Union Mutual Life Insurance Co., 396 Congress St., Portland, Me. CD 12/30, under LB.

▲ Paul Tishman Co., Inc., 21 E. 70 St., New York, N. Y. LB $6,937,800. construct and finance 505 HOUSING units, Otis Air Force Base, FALMOUTH, MASS. Purch. & Contg. Office, Otis Air Force Base, Falmouth, Mass. The Architects Collaborative, 96 Mt. Auburn St., Cambridge, Mass., archts. Fred S. Subin & Assoc., 178 S. Whitney St., West Hartford, Conn., mech. engrs. Bids Jan. 18. CD 12/14, under Airports.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 14 Maryland
STREETS AND ROADS
February 14 Maryland — February 23 New York

BUILDINGS—BA

▲ Md., Baltimore—HOSPITAL—BA 2/14—Associated Jewish Charities, Eutaw and Monument Sts., Zone 1, (selected list bidders), six 2 to 5 story hospital bldgs., power plant, Greenspring and Belvedere Aves. Total est. $12,000,000. Extended date, Voorhees, Walker, Smith & Smith, 101 Park Ave., New York, Zone 17, N. Y., archts. Jas. H. Stevenson, 401 N. Charles St., Baltimore, Zone 1, local archt. CD 1/6.

▲ Md., Silver Spring—LABORATORY—BA 2/20—Vitro Corp. of America, 962 Wayne Ave., research laboratory, Georgia and Connecticut Aves., Wheaton, $1,000,000. CD 11/7.

▲ Pa., Meadville—SCHOOL—BA 2/28—Meadville Area School Auth., brick, steel high school, North St. exten. $2,000,000. W. G. Eckles Co., Lawrence Sav. & Trust Bldg., New Castle, archt. CD 3/9/55.

HEAVY CONSTRUCTION—LB & CA

▲ NEW YORK—State Dpt. P. Wks., Gov. Alfred E. Smith State Office Bldg., Albany,
N. Y.—Johnson, Drake and Piper, Inc., 86 Trinity Pl., New York City, N. Y., LB $5,064,617.90 Est. $5,584,000. (4 bidders) constr. 3.7 mi. portion of Erie Sect. of State Thruway and 2.34 mi. access roads from Bayview Rd. northward to Abbott Rd. in Lackawanna, Erie Co.;
N. Y.—S. J. Groves & Sons, Co., 208 Empire Building, Syracuse, N. Y., LB $5,590,646. Est. $6,179,000. (4 bidders) constr. 2.35 mi. portion of Erie Sect. of State Thruway and 4.15 mi. of access roads, from Abbott Rd. northeastward to Cazenovia Creek, Erie Co. ;
N. Y.—Johnson, Drake & Piper, Inc., 86 Trinity Pl., N. Y., N. Y., LB $7,502,149, Est. $7,772,000. (2 bidders) constr. 4.19 mi. portion of Erie Section of State Thruway and 0.23 mi. of access road from Cazenovia Creek northward to Clinton St. in outskirts of Buffalo, Erie Co.;
N. Y.—Mount Vernon Contracting Corp., and Wosstroff & Oliver (joint venture) 439 No. Terrace Ave., Mt. Vernon, N. Y., LB $6,575,425. Est. $8,573,000. (8 bidders) constr. 2.49 mi. portion of New England Sect. of State Thruway and 3.05 mi. of access roads from Chatsworth Ave. in Larchmont northeastward to Mamaroneck Ave. in Mamaroneck, Westchester Co.;
N. Y.—Callanan Road Improvement Co., South Bethlehem, N. Y. LB $66,999. Est. $92,000 (8 bidders) washout repairs on 12.29 mi. section of Taconic State Parkway between Lafayetteville and Rte 82, near W. Taghkanic, Columbia and Dutchess Counties. Bids Feb. 2. CD 1/10.
N. Y.—Roads Construction Corp., McKie St., Rochester, N. Y. LB $7,708. Est. $9,000 (7 bidders) drainage imprvs., incl. new culvert on 0.02 mi. sect of Rte. 259 in Spencerport just north of railroad underpass, Monroe Co.;
N. Y.—L. G. Collins; Greenwich, N. Y., LB $62,051 Est. $64,000 (2 bidders) paving, misc. constr. work at State Thruway toll plazas near Spring Valley, Catskill, Verona, Syracuse (Rte. 48) Rochester (Rte. 96) Batavia and Depew, various counties. Bids Feb. 2.
N. Y.—Received no bids Feb. 2. Est. $4,000 drainage work along State Thruway between Caroga Creek and Fort Plain, Montgomery Co.;
N. Y.—Received no bids Feb. 2. Est. $23,000 installation of addnl. electrical facilities at 40 state thruway toll plazas between Yonkers and Buffalo, various counties.

▲ J. Rich Steers Co., 17 Battery Place, New York 4, N. Y. LB $3,694,980. (1 bidder) Contr. 877, constr. site in Hudson River upon which site will be constr. Yonkers Sewage treatment plant, incl. site constr., wharf, outfall drainage and appurtenant work located in city of Yonkers, WHITE PLAINS, N. Y. Westchester Co., County Office Bldg., White Plains, N. Y. Bids Feb. 1. CD 1/17.

▲ PENNSYLVANIA—State Hy. Dpt. 506 N. Office Bldg., Harrisburg,
Pa.—Brayman Constr. Co., 67 N. Harrison Ave., Pittsburgh 2, Pa. LB $1,718,680. (6 bidders) Schedule I, substructure of 13-span deck plate girder bridge, constr. ramps, service roads, I-beam bridge, Rochester, Bridgewater and Beaver Boros, T. R. 51, 68, 88, 18, Beaver Co.;
Pa.—Pittsburgh Des Moines Steel Co., Neville Island, Pittsburgh 25, Pa. LB $2,324,736. (3 bidders) Schedule 2, superstructure of 13 span deck truss and plate girder bridge on T. R. 51, Beaver Co. Bids Jan. 27. CD 12/30.

▲ PENNSYLVANIA—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,
Pa.—Latrobe Road Constr. Inc., Post Office Box 150, Latrobe, Pa. LB $5,381,623. (6 bidders) constr. Etna-Sharpsburg By-pass several bridges, ramps are incl. in this 1.52 mi. proj., Shaler Twp., Etna and Sharpsburg Boros, T.R. 8 and 28, Allegheny Co.;
Pa.—Lipsett Incorporated, 99 Park Ave., New York 16, N. Y. and Booth & Flinn Co., 1942 Forbes St., Pittsburgh, Pa. (joint bid) LB $7,884,068 (6 bidders) relocation of West River Dr. in Philadelphia City, 2.43 mi., incl. 9 bridges box culverts, retaining walls and pedestrian overpass in vicinity of Philadelphia Zoo, Philadelphia Co.;
Pa.—Adam Eidemiller, Inc., R.D. No. 4, Greensburg, Pa. LB $1,080,807 (6 bidders) 2.91 mi. high level fy., city of New Kensington, Lower Burrell Twp., L.R. 64268, Road No. 9801 and Leg. Rte. 188, Westmoreland Co. Bids Jan. 27. CD 12/30.

BUILDINGS—LB & CA

▲ M. Melnick & Co., Inc., 225 Willow Ave., New York 54, N. Y. CA $1,557,000. general constr. new addn. to and modernization of existing Bushwick High SCHOOL, Irving Ave. and Woodbine St., BROOKLYN, N. Y. Director Bureau Constr. 42-15 Crescent St., Long Island City 1, N. Y. Bids Dec. 22. CD 1/4, under LB.
Theodore Kaish, 232 Franklin Ave., Brooklyn 5, N. Y. CA $621,800. electrical work (Brooklyn, N. Y.).

▲ Arthur Venneri Co., 300 North Ave. E. Westfield, N. J. LB $6,245,282. general constr. 763 HOUSING UNITS, Talbert Mall, Ellicott Dist., BUFFALO, N. Y.

Buffalo Municipal Housing Auth., 901 City Hall, Buffalo 2, N. Y., Bids Jan. 31, CD 1/27;
Quackenbush Co., Inc., 505 Franklin St., Buffalo, N. Y. LB **$532,847.** heating and ventilating work (Buffalo, N. Y.);
Frey Electric Co., 225 French St., Buffalo, N. Y. LB **$404,954.** electrical work (Buffalo, N. Y.);
John Knox Co., Inc., 1736 Fillmore Ave., Buffalo, N. Y. LB **$787,624.** plumbing work (Buffalo, N. Y.).

▲ **L. B. Strandberg & Son, Inc.**, 8 Front St., Binghamton, N. Y. LB **$1,620,625** (3 bidders) general constr. GYMNASIUM, ENDICOTT, N. Y. State, Dpt. P. Wks., The Gov. Alfred E. Smith State Office Bldg., Albany, N. Y. Bids Jan. 19. CD 6/13.

▲ **Lasker-Goldman Corp.**, 50 E. 42 St., New York, N. Y. CA **$2,054,000.** general constr. HEALTH and PHYSICAL EDUCATION BLDG. of Queens College, FLUSHING, N. Y. Bd. Higher Educ., Queens College, Business Office, 65-30 Kissena Blvd., Flushing 67, N. Y. CD 12/19, under LB.

▲ **319 E. 72 St. Corp.**, 855 Sixth Ave., New York, N. Y. Separate Contracts. **$2,000,000.** APARTMENT, 315-21 E. 72 St., NEW YORK, N. Y. CD 12/6.

▲ **James King & Son, Inc.**, 350 Fifth Ave., New York 1, N. Y. CA Est. **$1,500,000.** 5 story elementary SCHOOL, 215 E. 6 St., NEW YORK, N. Y. Ruthenian Greek Catholic Church of St. George, 24-28 E. 7 St., New York, N. Y. Brother Cajetan (J. B. Baumann), 44 Whitehall St., New York 4, N. Y., archt.

Sano Rubin Constr. Co., 618 Delaware St., Schenectady, N. Y. LB **$936,440.** (3 bidders) SENIOR HIGH SCHOOL, NISKAYUNA, N. Y. Central School Dist. No. 1, Niskayuna, N. Y. Henry L. Blather, N. Pearl St., Albany, N. Y., archt. Bids Jan. 17.

Dawson Bros. Constr. Co., 329 W. Water St., Syracuse, N. Y. LB **$849,500,** (9 bidders). Frederick Leighton Elementary SCHOOL, OSWEGO, N. Y. City, Oswego, N. Y. Former low bid was withdrawn from letting. CD 1/18, under LB.

▲ **William E. Bouley Co., Inc.**, 33 William St., Auburn, N. Y. LB **$7,412,000.** (6 bidders) general constr. for MEDICAL-SURGICAL CENTER (Bldg. No. 62) Rochester State Hospital, ROCHESTER, N. Y. Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, N. Y. Bids Jan. 26, CD 12/19;
Joseph Davis, Inc., 120 W. Tupper St., Buffalo, N. Y. LB **$793,433.** (5 bidders) heating work: (Rochester, N. Y.);
Astrove Plumbing & Heating Corp., 36-14 32 St., Long Island City, N. Y. LB **$710,000.** (4 bidders) sanitary work. (Rochester, N. Y.);
Horacek-Hayden, Inc., 16 Howell St., Rochester, N. Y. LB **$909,660.** (6 bidders) electrical work (Rochester, N. Y.).

▲ **Syndicate**, c/o Romolo Botelli, Jr., archt., 45 Branford Pl., Newark, N. J., Separate Contracts **$2,500,000,** 21 story APARTMENT for 279 families, S. Harrison St. and E. Highland Ave., EAST ORANGE, N. J.

▲ **Daniel J. Cronin, Inc.**, 717 S. Orange Ave., Newark, N. J., CA Est. **$2,000,000,** JUNIOR-SENIOR HIGH SCHOOL, EAST PATERSON, N. J. Bd. Educ., 16 Ave., East Paterson, N. J. Alfonso Alvarez, Jr., 243 Lorraine Ave., Upper Montclair, N. J., archt. CD 1/21/55.

▲ **George F. Driscoll Co.**, 41 E. 42 St., New York, N. Y., CA **$30,000,000,** general contract, Bergen Mall SHOPPING CENTER, Intersection Rte. 4 and Spring Valley Rd., PARAMUS, N. J. Bergen Mall, Inc., sub. Allied Stores Corp., 401 Fifth Ave., New York, N. Y. CD 4/26.

▲ **Foster Wheeler Corp.**, 165 Broadway, New York 6, N. Y., Est. **$20,000,000,** 22,000 bbl. per day CATALYTIC HYDRODESULFURIZATION UNIT, PAULSBORO, N. J. Socony Mobile Oil Co., 26 Broadway, New York, N. Y.

▲ **Canton & Goldman**, c/o Wolf & Glucksman, archts., 850 Broad St., Newark, N. J., Owner Builds, **$4,000,000.** West Essex SHOPPING CENTER, 20-acre tract on Bloomfield Ave., WEST CALDWELL, N. J.

▲ **Dick Corp.**, Rte 51, Large, Pa. LB **$1,111,111.** est. **$1,000,000.** steel, masonry 2-level Junior-Senior High SCHOOL, Hampton Twp., ALLISON PARK, PA. Hampton Twp. School Auth., Allison Park, Pa. Bids Dec. 14. CD 11/30.

▲ **Nason & Cullen**, 6522 Vine St., Phila. 39, Pa. CA Approx. **$1,000,000.** RESEARCH and DEVELOPMENT UNIT No. 2, MARCUS HOOK, PA. Sun Oil Co., 1608 Walnut St., Phila. 3, Pa. Bids Jan. 11. CD 12/15.

Cladoy Constr. Co., 635 F St., Wash., D. C. CA **$950,000.** masonry SHOPPING CENTER, STORES, parking area, FREDERICK, MD. Frederick Shopping Center, c/o Beria & Abel, archts., 1636 Conn. Ave. N. W., Wash., D. C. Bids Jan. 10. CD 12/29.

SOUTH

HEAVY CONSTRUCTION—BA

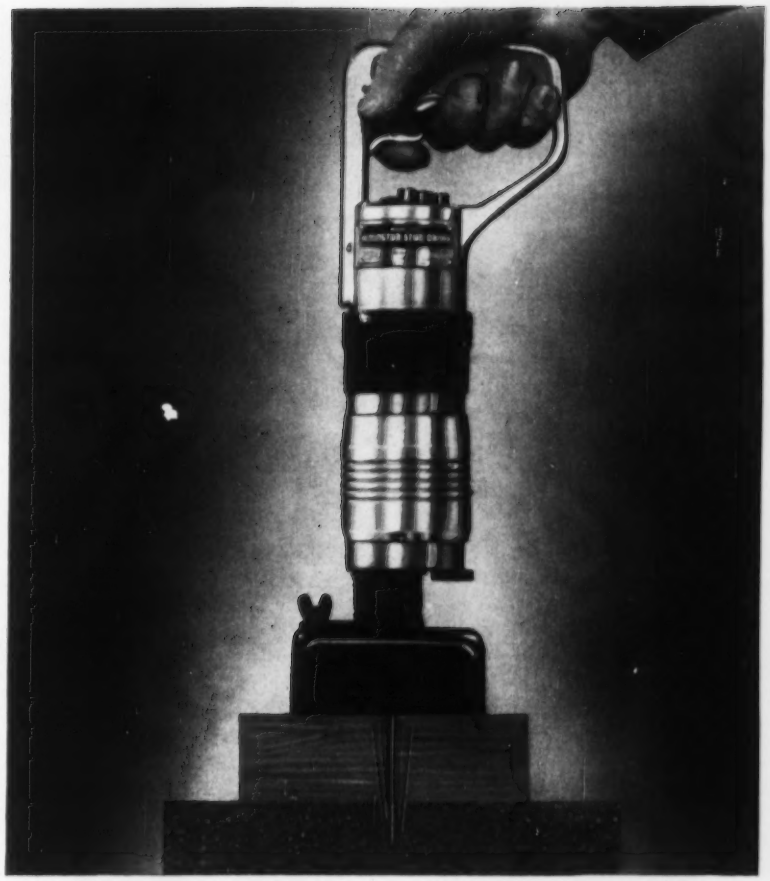
STATE HIGHWAY LETTINGS
BRIDGES

February 14 South Carolina — February 16 Florida

STREETS AND ROADS

February 14 South Carolina — February 16 Florida
February 29 Louisiana

▲† **Kentucky and Indiana**—BA 2/29—U. S. Eng., P. O. Box 59, Louisville 1, Ky., constr. locks, Markland Locks and Dam, Ohio River, near Ghent, Tumble Co., Ky., near Markland, Switzerland Co., Ind., $60,000,000. New bid date. CD 1/10.



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BUILDINGS—BA

▲ **Va., Arlington**—HIGH SCHOOL—BA 3/1—Richard E. Collins, Glenmont Rd., Silver Spring, Md., Dennis J. O. O'Connell High School, North 26 and Underwood Sts., for Diocese of Richmond, 807 Cathedral Ave., Richmond, Va. $2,500,000. Plans deposit $100. T. J. Collins & Sons, Staunton, archts. CD 4/7.

▲ **La., Baton Rouge**—LIBRARY—BA 3/6—State Bldg. Auth., State Capitol, 5 story, bsmnt., masonry, rein.-con. 80,000 sq. ft. State Library, Boyd and North Third Aves., $1,500,000. Plans deposit $50, Burk, LeBreton & Lamantia, 632 Pirates Alley, New Orleans, archts.

HEAVY CONSTRUCTION—LB & CA

▲ **W. E. Graham & Sons**, Cleveland, N. C., CA $1,300,000. dam at Occoquan Creek near Lorton, ALEXANDRIA, VA. Alexandria Water Co., 107 N. Asaph St., Alexandria, Va.

▲† **Roberson Constr. Co.**, 1513 Lyon St., Columbia, S. C. LB $1,223,100, organizational maintenance hangars, Myrtle Beach Air Force Base, No. 38-081-56-41, MYRTLE BEACH, S. C. U. S. Eng., 31 Customhouse, Charleston, S. C. Bids Jan. 25. CD 1/5.

▲† **Southern Constr. Co. Inc.**, Daniel Field, Augusta, Ga., LB $1,081,790. Sch. 1, base bid, 3 airmen's dormitories, Brookley Air Force Base, ENG-01-076-56-38, MOBILE, ALA. U. S. Eng., 2301 Grant St., Mobile, Ala. Bids Jan. 24. CD 12/14.

▲† **T. L. James & Co.**, P. O. Box 531, Ruston, La. CA $1,146,441, est. $1,028,400 airfield paving, England Air Force Base, ENG-03-050-56-46, ALEXANDRIA, LA. U. S. Eng., P. O. Box 867, Little Rock, Ark. Bids Jan. 13, awarded Jan. 30. CD 1/19, under LB.

BUILDINGS—LB & CA

▲ **Tower Constr. Co.**, 1726 L St. N.W., Wash., D. C., CA, $3,500,000. SHOPPING CENTER, West Broadway, RICHMOND, VA. Willow Lawn, Inc., 1726 L St. N.W. Wash., D. C. J. Saunders, 1757 K St. N.W., Wash., D. C., archt. CD 10/2/53

▲ **Fowler-Jones Constr. Co.**, Reynolds Bldg., Winston-Salem, N. C., LB $1,174,800, 31 DWELLINGS, Proj Happy Hills Gardens NC-12-1, WINSTON-SALEM, N. C. Winston-Salem Housing Auth., Reynolds Bldg., Winston-Salem, N. C. Bids Jan. 26. CD 1/20.

▲ **Dickman-Pickens-Bond Constr. Co.**, Gazette Bldg., Little Rock, Ark., CA. Total est. $5,400,000. sausage casings mfg. PLANT, LOUDON, TENN. Visking Corp., Fruit Ridge Ave. and Ft. Harrison Rd., Terre Haute, Ind. Awarded Jan. 27.

▲ **Babcock & Wilcox Co.**, 161 E. 42 St., New York, N. Y., LB $24,489,355, installing 3 steam boilers for 750,000 kw municipal POWER PLANT, MEMPHIS, TENN. Memphis Light, Gas & Water Comn., 2996 Ky. 61 S., Memphis, Tenn. Bids Jan. 26, CD 1/5; **Allied Structural Steel Co.**, 20 N. Wacker Dr., Chicago, Ill. LB $4,054,100, provision of steel for power plant (Memphis, Tenn.).

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 16 Wisconsin
STREETS AND ROADS
February 16 Wisconsin

BUILDINGS—BA

▲ **Wis., Milwaukee**—SCHOOL—BA 2/23—Bd. School Directors, 1111 N. 10 St., Zone 3, Thomas Edison Junior High School addns., remodeling, $1,000,000. Plans deposit $100. Grassold-Johnson & Assocs., 734 N. Jefferson St., Zone 2, archts. CD 1/26.

▲ **O., Centerville**—SEMINARY—BA 2/25—Province of Franciscan Order, 1615 Vine St., Cincinnati, 2 and 3 story, brick seminary, known as St. Leonard College, 245-acre tract southeast corner Clyo and Centerville State Rds., $3,000,000. CD 1/9.

HEAVY CONSTRUCTION—LB & CA

▲ **R. S. Ursprung Co.**, Hanna Bldg. Annex, Cleveland, O., LB est. $3,250,000 (4 bidders) general contract, two hangars, one 135x676 ft. and one 120x364 ft. Cleveland Hopkins Airport, CLEVELAND, O. Standard Oil Co. (Ohio), United Airlines, American Airlines, Republic Steel, M. A. Hanna Co. and Thompson Products Inc., Midland Bldg., Cleveland, O. Bids Dec. 13. Skidmore, Owings & Merrill, 100 W. Monroe St., Chicago, Ill., engrs., CD 10/7/54

▲ **ILLINOIS**—State Div. Hys., Centennial Bldg., Springfield.

Ill.—**Powers-Thompson Constr. Co.**, 27 S. Chicago St., Joliet, Ill. LB $1,424,337, c. conc. 6.93 mi. U. S. 66, Will Co.; LB $637,636, conc. base course 1.76 mi. c. conc. base course wid'n 15.52 mi. 2 concrete slab bridges, wid'n. 1 box culvert Ill. 47 and U.S. 6, Grundy and Kendall Counties;

Ill.—**Central Eng. Co.**, P. O. Box 838, Davenport, Iowa, LB $681,061 c. conc. 1.59 mi. U.S. 150, Rock Island Co.; LB $284,994 c. conc. 3.46 mi. FAS 206 and 207, Rock Island Co.;

Ill.—**Strunk Brothers**, Tiskilwa, Ill. LB $330,000. bit. surf. 5.33 mi. F.A. 168, Putnam Co.;

Ill.—**S. J. Groves & Sons**, 1104 W. Reynolds St., Springfield, Ill. LB $487,839, bit. surf. 5.93 mi. F.A. 168, Putnam Co.;

Ill.—**Princeton Stone Co.**, Princeville, Ill. LB $393,760, bit. surf. 5.62 mi. F.A. 168, Marshall Co.;

Ill.—**Ninora Constr. Co.**, 139 E. Van Buren St., Joliet, Ill., LB $301,919, bit. resurf. 18.52 mi. Ill. 47 and U.S. 6, Grundy and Kendall Counties;

Ill.—**Gem Contg. & Paving, Inc.**, Moose Bldg., Quincy, Ill., LB $219,679, bit. resurf. 10.83 mi. U. S. 24, Adams Co.;

Ill.—**E. T. Simonds Contr. Co. Inc.**, P. O. Box 356, Carbondale, Ill. and **J. D. Barter Contr Co.**, Harrisburg, Ill., LB $666,963, conc. base course 4.56 mi., conc. base course wid'n 6.27 mi. U.S. 24, Adams Co.;

Ill.—**Clark Brothers Co.**, 309 S. Jefferson Ave., Peoria, Ill., LB $91,688, landscaping 8.93 mi. Ill. No. 3, Randolph Co.;

Ill.—**Jno. Doherty Co.**, 9824 S. Genoa Ave., Chicago 43, Ill., LB $308,978, storm sewers, drainage structures, 2.2 mi. S.B.I. 46, Cook Co.;

Ill.—**Frank C. Feutz Co.**, 901 Tenbroeck St., Paris, Ill. LB $119,981 shoulder and ditch grading 17.04 mi. Ill. 185, Fayette Co.;

Ill.—**Eric Bolander Constr. Co.**, Winchester Rd., Libertyville, Ill., LB $1,639,666. c. conc. 5.34 mi. U. S. 66, Will Co.;

Ill.—**O'Connor Constr. Co.**, 320 Reisch Bldg., Springfield, Ill., LB, $2,544,074, c. conc. 7.21 mi. U.S. 66, Will co.;

Ill.—**E. A. Meyer Constr. Co., Inc.**, 1539 Morrow Ave., North Chicago, Ill., LB, $1,191,491. c. conc. paving 7.3 mi U. S. 66, Will Co.;

Ill.—**Bushman Constr. Co.**, 3706 Broadway, Kansas City 11, Mo., LB, $878,038, c. conc. 2.61 mi. Ill. 111, Madison Co.;

Ill.—**Bituminous Fuel & Oil Co.**, 304 Illinois Ave., East St. Louis, Ill., LB $385,289, bit. resurf. 5.2 mi. F.A.S. 842, St. Clair Co.;

Ill.—**Orr Constr. Co.** 27 E. 19 Pl., Chicago Heights, Ill., LB, $1,970,481. c. conc. 6.63 mi. U.S. 66 Will Co. Bids Jan. 27. CD 1/16 and 1/10.

MICHIGAN—State Hy. Dpt., Stevens T. Mason Bldg., Lansing.

Denison Constr. Co., Munising, Mich LB $137,497, est. $140,000. (5 bidders) bridge carrying US-41 and M-35 over Escanaba River 3 mi. north of Escanaba; MBI of 21-13-11 CS-R, Delta Co. Bids Jan. 24. CD 1/11.

BUILDINGS—LB & CA

▲ **Edward J. DeBartolo**, 2640 Market St., Youngstown, O., Owner Builds, $1,500,000, Norton Village SHOPPING CENTER, corner Rtes. 224 and 21, edge of city of BARBERTON, O.

▲ **Otto G. Fifield, Inc.**, 4201 E. 10 Ave., Gary, Ind., Own Forces, $1,700,000. 140 HOMES, GARY, IND.

▲ **Baldwin Builders**, 7042 Calumet Ave., Hammond, Ind., Own Forces, $2,100,000. 175 HOMES, HAMMOND, IND.

▲ **Homestead Constr. Co.**, 8231 Kennedy St., Highland, Ind. Own Forces, $1,100,000. 80 HOMES, HIGHLAND, IND. Awarded Jan. 24.

▲ **Clearing Industrial District**, 38 S. Dearborn St., Chicago 3, Ill., CA, $4,500,000. steel WAREHOUSE and OFFICE, Wolf Rd. and C. M. & St. P. R.R., BENSONVILLE, ILL. A. M. Castle Co., 1132 Blackhawk St., Chicago, Ill. Awarded Jan. 23.

▲ **Power Constr. Co.**, 125 S. Marion St., Oak Park, Ill., LB, $2,775,433, Bloom Twp. HIGH SCHOOL addn. CHICAGO HEIGHTS, ILL. School District 206, 10 Ave., Chicago Heights, Ill. Bids Jan. 11. CD 12/21.

▲ **R. B. Colby**, 45 Grant St., Crystal Lake, Ill., Own Forces, $1,000,000. 50 HOMES, CRYSTAL LAKE, ILL.

▲ **L & H Builders**, 719 S. Lake St., Mundelein, Ill., Own Forces, $1,800,000, 130 HOMES, MUNDELEIN, ILL.

A. G. Elliott & Sons, 815 S. Woodward St., Royal Oak, Mich. Owner Builds. $900,000. Charing Cross Hamlet subdivision, 38 custom built brick HOUSES, BLOOMFIELD, MICH.

▲ **Unity Realty Co.**, 15030 Wyoming St., Detroit, Mich. Owner Builds. $1,250,000. 105 brick ranch HOMES, Cook and McCann Sts., ECORSE, MICH.

▲ **Luvisch Building Co.**, 25323 Plymouth Rd., Redford, Mich. CA Est. $1,400,000. 100 brick ranch HOMES, Plymouth Rd. Cindy Ave. section, FARMINGTON, MICH.

▲ **David Kay**, 10051 Southfield St., Detroit 28, Mich. Owner Builds. $1,800,000. Bretondale Park subdivision, 150 brick HOUSES, ST. CLAIR SHORES, MICH.

▲ **David Kay**, 10051 Southfield St., Detroit 28, Mich. Owner Builds. $1,700,000. SHOPPING CENTER, 24 stores, parking lot, Masonic and Harper Sts., ST. CLAIR SHORES, MICH.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 17 Minnesota February 20, 21 Texas
STREETS AND ROADS
February 17 Minnesota February 20, 21 Texas
February 21 Iowa

▲† **Oklahoma**—BA 2/15—U. S. Eng., P. O. Box 61, Tulsa, Okla., Oklahoma City Floodway, Contract No. 4, 17,400 lin. ft., ENG-34-066, $3,000,000. CD 8/30/45.

BUILDINGS—BA

▲ **Minn., St. Paul**—SCHOOL—BA 2/28—Bd. Educ., J. Voigt, school bd. archt., bids by L. E. Invig, city

purch. agt., 253 City Hall, 1 and 2 story wings, and 3 story section, 270x540 ft. T-shaped Highland Park High School, Montreal and Snelling Aves. $2,000,000. Hammel & Green, 1932½ University Ave., archts. CD 10/21.

HEAVY CONSTRUCTION—LB & CA

▲ **Northern States Power Co.**, 15 S. Fifth St., Minneapolis, Minn. Own Forces. Approx. **$1,250,000.** transmission line from owner's Black Dog Plant, south of Minneapolis to Chaska and Young America, both Minn., sub-stations, Minneapolis; **$300,000.** connection with U. S. Bureau Reclamation transmission line at Granite Falls; **$200,000.** 69,000 volt transmission line between Atwater and Cosmos, MINNESOTA. Grand total $1,750,000. CD 2/6/52.

▲ **Northern States Power Co.**, 15 S. Fifth St., Minneapolis, Minn. Own Forces. Approx. **$3,300,000.** furnish, install about 76 mi. gas mains in St. Paul and other addnl. natural gas facilities, MINNESOTA.

▲† **Universal Constr. Co.**, 1200 S. W. Blvd., Kansas City, Kan. LB **$1,148,688,** est. $1,062,165. field maintenance hangar, Grandview Air Force Base, Spec. 56-52, GRANDVIEW, MO. U. S. Eng., Federal Office Bldg., Kansas City, Mo. Bids Jan. 24. CD 1/9.

▲ **NEW MEXICO**—State Hy. Comn., Capitol Bldg., Santa Fe.

N. M.—**Floyd Haake**, Agua Fria, Santa Fe, N. M. CA, **$177,693.** Roswell-West, Proj. F 021-2 (3), Chaves Co.; CA, **$117,144,** US 85-Monticello, Proj. S 11-49 (1), Sierra Co.;

N. M.—**Brown Contg. Co.**, 3525 4 St. N. W., Albuquerque, N. M. CA, **$398,394.** Shiprock-East, Proj. F 032-1 (2), San Juan Co.;

N. M.—**Lowdermilk Brothers**, Espanola, N. M. CA, **$897,648.** Santa Fe-Rio Arriba Co. Line-North, Proj. F 015-1 (3), Arriba Co.;

N. M.—**Armstrong & Armstrong**, Roswell, N. M. CA, **$169,652.** Jct. SR 83-Dungken, Proj. S 1201 (4), Chaves Co.;

N. M.—**G. I. Martin**, 400 California St. S. E., Albuquerque, N. M. CA, **$111,841.** Eddy-Lea Co. line-Jal, Proj. S 1271 (3), Lea Co. Grand total $1,872,372. Bids Jan. 27. CD 1/18.

BUILDINGS—LB & CA

▲ **Fowler-Veranth Constr. Co.**, 303 S. First Ave. E., Duluth, Minn. LB **$1,637,800,** (6 bidders) construct and finance family HOUSING and exterior work, Duluth Air Force Base, ENG-21-018-56-6, DULUTH, MINN. U. S. Eng., 1217 Post Office and Custom House, St. Paul, Minn. Bids Jan. 27. CD 1/6, under Airports.

▲ **C. A. Bissman Co.**, 1027 S. Glenstone St., Springfield, Mo. Owner Builds. **$5,000,000.** SHOPPING CENTER, SPRINGFIELD, MO. Matthews & Hillman, St. Louis, Mo., archts.

▲ **Lippert Bros. Constr. Co.**, 2501 Blackwelder St., Oklahoma City, Okla. CA **$1,729,432.** general constr. RESIDENCE HALL and STUDENT ACTIVITY BLDG., ATCHISON, KAN. Mount St. Scholastica College, Atchison, Kan. Bids Jan. 10. CD 12/20.

L. **R. Foy Constr. Co.**, 417 N. Main St., Hutchinson, Kan. CA **$896,169.** JUNIOR HIGH SCHOOL, HUTCHINSON, KAN. Reno County School Dist. 1, Hutchinson, Kan. CD 1/31, under LB.

▲ **J. J. Fritch**, 6834 Harry Hines Blvd., Dallas, Tex. CA **$1,911,464,** Bryan Adams HIGH SCHOOL, DALLAS, TEX. Dallas Independent School Dist., 3700 Ross St., Dallas, Tex. Bids Jan. 24. CD 1/31, under LB.

Rognstad-Olsen Constr. Co., Box 266, Casper, Wyo., LB **$998,000.** 6 story, bsmnt., 60,600 sq. ft. PETROLEUM BLDG., CASPER, WYO. Fred Goodstein, 1225 S. Center St., Casper, Wyo. Bids Jan. 20. CD 1/9.

▲ **A. A. and E. B. Jones**, 1050 S. Jason St., Denver, Colo., CA, **$1,576,000,** general contract, Baker Junior HIGH SCHOOL, DENVER, COLO. School Dist. No. 1, 414 14 St., Denver, Colo. Bids Jan. 11, awarded Jan. 18. CD 1/24, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

▲† **California**—NIKE—BA 2/28—U. S. Eng., 1209 B St., Sacramento, Nike T 53, Potrero at Travis Air Force Base Defense Area, Travis Air Force Base, Solano Co. $1,000,000. Extended date. CD 1/20.

HEAVY CONSTRUCTION—LB & CA

▲† **M. M. Sundt Constr. Co.**, 440 S. Park St., Tucson, Ariz., LB, **$2,649,957,** apron and runway exten., Davis-Monthan Air Force Base, ENG-04-353-56-80, TUCSON, ARIZ. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Jan. 27. CD 1/9.

▲† **R. V. Lloyd & Co.**, Box 391, Coachella, Calif., CA **$1,849,118,** irrigation laterals, Kern County District, DC 4577, CALIFORNIA. Bureau Reclamation Dpt. Interior, Lindsay, Calif. Bids Jan. 4. CD 1/19, under LB.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles.

Thompson Constr. Co., 8330 Hindry Ave., Los Angeles, Calif., CA **$2,465,402,** grading, paving, surf. 1.1 mi. San Diego Freeway between Ohio Ave. and Waterford St., 7 rein.-con. bridges, pedestrian undercrossing, retaining walls and extending pedestrian undercrossing, San Diego Co. Bids Jan. 12, awarded Jan. 31. CD 1/18, under LB.

▲† **Stolte, Inc.**, 8451 San Leandro St., Oakland, Calif., CA **$1,173,887,** (6 bidders) 3 airmens dormitories, shop, organizational special purpose flight simulator training bldg., McClellan Air Force Base, ENG-04-

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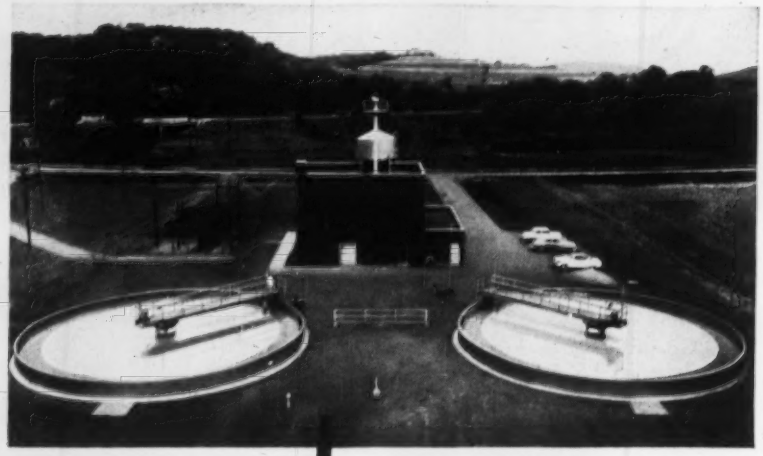

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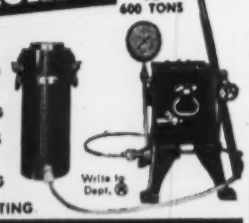

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167-56-32, SACRAMENTO, CALIF. U. S. Eng., 1209 8 St., Sacramento, Calif. Bids Jan. 19, awarded Jan. 27. CD 1/24, under LB.

▲† McDonald Bros. & Fred Chapek, 2639 S. La Cienega Blvd., Los Angeles, LB $1,035,289, 3 concrete, frame airmen's dormitories, Mather Air Force Base, ENG-56-40, SACRAMENTO, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. CD 9/1.

William Peper Constr. Co., 3026 N. 16 St., Phoenix, Ariz., CA, $918,860, 90,000 sq. ft. TECHNOLOGY and INDUSTRIAL COLLEGE, TEMPE, ARIZ. Arizona State College, Tempe, Ariz. Haver & Elmore, 207 E. Camelback Rd., Phoenix, Ariz., archts. Awarded Jan. 24.

▲ Gust K. Newburg Constr. Co., 2800 Snowden Ave., Long Beach, Calif., LB $3,806,340. Lakewood Senior HIGH SCHOOL, Lakewood, LONG BEACH, CALIF. Bd. Educ., 715 Locust Ave., Long Beach, Calif. Bids Jan. 27. CD 12/20.

CANADA

HEAVY CONSTRUCTION—BA

▲ Quebec—BA 2/15—Price Bros. & Co. Ltd., 65 Ste. Ann St., Quebec City, first phase of power development incl. bulk of excavation and part of concrete work to canal, pipe line and powerhouse. Total est. $10,000,000. Montreal Eng. Co. Ltd., 244 St. James St. W., Montreal, engrs. CD 1/4.

BUILDINGS—BA

▲ Ont., Owen Sound—HOSPITAL UNIT—BA 2/27—Owen Sound General & Marine Hospital, Owen Sound, 4 story, X-shaped with main body, 45x160 ft. wings, 45x80 ft., 45x132 ft., rein.-con. hospital unit. $1,163,000. Plans deposit $50. Craig & Madill, 734 Spadina Ave., Toronto, archts. CD 8/17.

HEAVY CONSTRUCTION—LB & CA

Essex County Council, County Bldg., Windsor, Ont., Own Forces, $890,000. road constr., maintenance bridge constr. and suburban roads, WINDSOR, ONT. W. H. Knister, County Bldgs., supt. Awarded Jan. 30.

BUILDINGS—LB & CA

▲ The Lummus Co. Canada Ltd., 455 Craig St. W., Montreal, Que., CA $20,000,000 design and construct PULP MILL, WHITECOURT, ALTA. Antler Wood Products Ltd., Edmonton, Alta. CD 2/1.

▲ Ladco Co. Ltd., 2281 Portage Ave., Winnipeg, Man., Owner Builds. $40,000,000, HOUSING DEVELOPMENT, incl. 3,041 single family homes, ST. BONIFACE, MAN. CD 1/5.

▲ Eastern Woodworkers Ltd., Brother St., New Glasgow, N. S., CA, $2,187,080 (8 bidders) 215 HOUSING UNITS with water and sewer service connections, walks, drives, grading, Gatetown Army Camp, FREDERICTON, N. B. Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. Bids Dec. 20, awarded Jan. 16. (Correction—contractor). CD 12/13, under CA.

Argo Construction Ltd., 18 Gladstone Ave., Montreal, Que., CA, $998,400 (7 bidders) 61,000 sq. ft. SCHOOL Addn., CORNWALL, ONT. Cornwall Collegiate & Vocational School Bd., 46 Second St. W., Cornwall, Ont. Bids Dec. 14, awarded Jan. 20. CD 11/22.

▲ M. Sullivan & Sons Ltd., Elgin St., Arnprior, Ont., CA, $1,012,245, ADMINISTRATION BLDG., Q.M. and TECHNICAL STORES, 2 JUNIOR RANKS CLUBS, Army Camp, PETAWAWA, ONT. Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. Bids Jan. 31. CD 1/12.

▲ Pigott Constr. Co., Ltd., 1250 Bay St., Toronto, Ont., CA $1,500,000, TRAINING SCHOOL, Cedar Brook Farm, UXBRIDGE, ONT. St. John's Training School, 127 Victoria Park Ave., Toronto, Ont. Mathers & Haldenby, 15 St. Mary St., Toronto, Ont., archts. CD 1/16.

Capitanal Constr. Ltd., 299 Ste. Madeleine Blvd., Cape de la Madeleine, Que., CA $920,000 (3 bidders) ACADEMY, Ste Louis de Gonzague, LOUISEVILLE, QUE. School Comrs. of Louiseville, W. Lambert, secy., Louiseville, Que. Bids Jan. 24. CD 1/10.

▲ Dominion Bridge Co. Ltd., Lachine, Que., CA, Total est. $15,000,000, fabrication, erection structural steel for CHEMICAL PLANT, VARENNES, QUE. Canadian Titanium Pigments Ltd., 630 Dorchester St. W., Montreal, Que. Awarded Jan. 16. A. V. Bender, owners (c/o National Lead Co., 111 Broadway Ave., New York, N. Y.); United Engineers & Consultants, Drexel Bldg., Phila., Pa.; and Surveyer, Chenevert & Nenniger, 1440 St. Catherines St. W., Montreal, Que., engrs. CD 8/29.

AMERICANS ABROAD

BUILDINGS—LB & CA

▲ F. C. Braun Co., 1100 S. Fremont St., Alhambra, Calif., U.S.A. CA, $5,000,000. 5,500 bbl. per day catalytic REFINERY, BREMEN, GERMANY. Socony Mobile Oil Co., 26 Broadway, New York, N. Y., U.S.A.

LATIN AMERICA

BUILDINGS—LB & CA

▲ Brown & Root, S. A. (subsidiary of Brown & Root, Inc.), Box 3, Houston, Tex., U. S. A. CA $1,500,000. Sulphur PLANT expansion, JALTIPAN DOME, MEXICO. Pan American Sulphur Co., c/o Harry Webb, Commerce Bldg., Houston, Tex., U. S. A. CD 1/30.

(Proposal Advertisement see pp. 84 to 87)

Unit Prices

Kentucky Highway Costs Up

A comparison of average 1955 and 1954 unit price low bids for the Kentucky Department of Highways shows a general trend up after prices had dropped in 1954 (ENR March 24, 1955, p. 88).

The highest increase for a major item effected borrow excavation which climbed from $0.37 to $1.03 per cubic yard. An exception is limestone aggregate bituminous mixture that dropped about 45%.

Following is a table averaging successful bids on principal items received during 1955.

Item:	Unit	1955 RS*	1955 Other	1954 RS*	1954 Other
Aggr, grav, bank or crk.	t	$1.29	$0.97	$0.85	$0.87
river	t	2.04	1.83	2.08	2.05
cr, bit mix	t	....	4.20	....	....
Aggr, limestn, crushed					
base & insulation	t	3.75	3.21	....	3.09
bit mix	t	3.51	3.60	6.33	6.15
seal	t	....	3.94	....	....
rdwy & entr	t	2.67	2.77	2.58	2.82
Aggr, slag, rdwy & entr.	t	4.31	3.65	....	....
Asph emuls, RS-1	gal	0.18	....	....	....
Bit ct aggr, cl F binder	t	....	6.60	....	....
surf	t	....	8.80	....	....
Bit conc, base, cl I	t	6.18	6.00	....	....
cl I	cy	....	13.38	....	10.91
binder, cl I	t	6.35	6.05	....	....
binder, cl I	cy	....	8.00	....	10.95
hand patch	t	....	12.00	....	....
grader patch	t	....	6.36	....	....
surf, cl I	t	6.40	6.53	....	....
mach patch	t	....	6.79	....	....
hand patch	t	....	8.96	....	....
surf, cl I	cy	....	13.64	....	11.53
cl I or H, bri floors	sf	....	0.33	....	0.23
Bit matl, mix, uncl	gal	....	0.14	....	0.12
MC-4	gal	0.136	....	0.13	....
prime or tack, uncl	gal	0.157	0.15	....	0.14
RC-3	gal	0.158	....	....	....
Calcium chloride	t	....	55.25	....	....
Catch basins, ditch	ea	....	222.73	....	....
lip curb	ea	....	200.00	....	....
adjust	ea	....	34.62	....	....
capping	ea	....	70.00	....	....
remov	ea	....	44.29	....	25.34
Clear & grub	mi	723.82	....	581.34	....
Clear & grub	ac	....	78.61	....	70.46
Concrete, cl A	cy	50.35	54.02	49.46	50.79
cl B	cy	....	51.02	....	49.12
cl D	cy	181.92	173.27	179.11	174.25
Curb, header	lf	....	2.14	....	....
integral	lf	....	0.81	....	0.81
roll	lf	....	1.98	....	....
conc, remove	lf	....	0.56	....	....
Curb & gutter, conc	lf	....	2.58	....	2.55
remove	lf	....	0.53	....	0.71
Ditches, pull	mi	....	223.60	....	....
Ditching & shouldering	mi	344.18	359.21	313.82	278.75
Ditch, surf, 1 sf area	lf	....	0.055	....	0.11
2 sf area	lf	....	0.178	....	0.16
Earthwork	mi	6,964	....	5,397	....
Edge key	lf	....	0.43	....	....
Excav, borrow	cy	....	1.03	....	0.37
rdwy	cy	....	0.49	....	0.50
struct, common	cy	4.02	4.65	4.02	6.20
solid rock	cy	9.89	10.90	9.76	10.86
uncl	cy	....	4.20	....	10.50
Fence, chain link	lf	....	2.88	....	....
Fertilzr, commrcl,					
10-10-10	t	....	92.37	....	83.58
12-12-12	t	....	91.15	....	....
Final dressing	sta	16.55	19.93	....	17.34
Flooring, bri, met plank	sf	....	1.72	....	....
Flume, conc	lf	....	5.35	....	5.35
inlets	ea	....	223.61	....	201.25
Guard rail, uncl	lf	....	3.18	....	....
beam type	lf	....	3.33	....	2.67
remove	lf	....	0.32	....	0.56
posts, timber	ea	....	1.01	....	....
Gutter, conc, valley	sy	....	5.95	....	6.20
remov	sy	....	1.66	....	....
Handrail, alum	lf	....	9.99	....	....
galv pipe	lf	....	4.95	....	....
chain link	lf	....	6.00	....	....
Headwalls, remov	ea	8.81	7.52	12.41	7.10
Hedge, remov	lf	....	1.04	....	0.78
reset	lf	....	0.45	....	0.87
Inlets, curb & gutt, 12"	ea	....	281.40	....	130.95
15"	ea	....	356.70	....	253.77
trapped, 15"	ea	....	356.44	....	....
Inlets, curb & gutt, 18"	ea	....	331.60	....	....
24"	ea	....	471.33	....	....
lip curb, 12"	ea	....	150.00	....	....
valley gutt, 15"	ea	....	223.33	....	....
24"	ea	....	250.00	....	....
Junction box	ea	....	325.00	....	....
Limestone, agricultural	t	....	18.47	....	7.39
Manholes	ea	....	335.37	....	247.98
adjust	ea	....	33.17	....	30.40
remov	ea	....	75.71	....	....
Masonry, wet stone	cy	....	24.16	....	....
stone, remov	cy	1.88	4.80	....	3.77
conc, remov	cy	9.12	12.27	7.67	9.02
Overhaul	stay	....	0.01	....	0.01
Pave, cmt conc	sy	....	5.21	....	4.06
base	sy	....	3.53	....	....
remove	sy	....	1.06	....	1.17
entrance	sy	....	5.14	....	....
Piling, conc, 14", f	lf	4.59	4.88	5.43	5.25
drive	lf	5.20	4.80	5.17	4.98
16", f	lf	....	5.52	....	....
drive	lf	....	5.02	....	....
20", f	lf	....	8.41	....	....
drive	lf	....	7.00	....	....
stl, 10", f	lf	5.00	3.02	5.03	....
drive	lf	5.00	2.12	5.03	....
12", f	lf	....	4.13	....	3.83
drive	lf	....	3.73	....	2.45
14", f	lf	....	4.50	....	....
drive	lf	....	2.00	....	....
creos timb, f	lf	....	2.88	....	....
drive	lf	....	3.25	....	....
Pipe culv, BCCM 18"	lf	4.18	4.64	4.31	4.34
24"	lf	5.27	5.52	6.04	6.41
30"	lf	6.86	7.50	8.10	....
36"	lf	10.23	10.00	11.68	....
42"	lf	12.51	12.53	12.78	....
48"	lf	15.11	13.90	....	....
RC, 12"	lf	....	2.57	....	....
15"	lf	3.16	3.08	3.07	2.77
18"	lf	3.78	3.79	3.67	3.69
24"	lf	5.43	5.51	5.33	5.23
30"	lf	7.69	8.05	7.44	7.32
36"	lf	10.27	10.30	9.90	10.31
42"	lf	12.87	13.00	12.79	13.11
48"	lf	16.22	16.50	16.55	16.37
54"	lf	20.31	21.73	19.98	....
RC ex st, 18"	lf	....	3.50	....	....
24"	lf	6.34	6.08	6.06	....
30"	lf	8.88	8.64	....	....
36"	lf	10.61	12.81	....	....
42"	lf	15.78	....	....	....
48"	lf	17.36	20.50	....	....
54"	lf	21.00	....	....	....
Pipe entrance, CM, 15"	lf	2.75	2.72	2.70	2.74
18"	lf	3.33	3.33	3.36	3.37
24"	lf	4.68	4.92	4.77	4.91
30"	lf	6.56	6.65	....	6.47
36"	lf	....	9.12	....	....
42"	lf	....	12.00	....	....
48"	lf	....	13.85	....	....
RC, 15"	lf	2.86	2.92	2.74	2.83
18"	lf	3.59	3.63	3.57	3.71
24"	lf	4.98	5.23	4.91	5.07
30"	lf	7.21	7.80	....	....
36"	lf	9.35	6.00	9.88	....
Pipe arch, CM, 18"x11"	lf	3.99	....	....	....
22"x13"	lf	5.01	5.22	....	....
29"x18"	lf	6.13	7.00	....	....
36"x22"	lf	7.34	7.58	....	....
43"x27"	lf	12.25	12.00	12.33	....
50"x31"	lf	14.01	....	....	....
58"x36"	lf	17.35	17.85	....	....
60"x40"	lf	19.05	....	....	....
65"x40"	lf	....	20.00	23.20	....
72"x44"	lf	25.28	....	27.29	....
77"x57"	lf	....	31.00	....	....
Pipe, remov	lf	1.22	1.25	1.27	1.05
relay	lf	1.18	1.25	1.11	1.11
Pipe entr, remov & relay	lf	1.97	1.80	1.80	1.74
Plate arch, 6'2"x4'8"	lf	28.38	....	....	....
6'5"x4'10"	lf	28.13	....	....	....
7'1"x5'2"	lf	32.53	....	....	....
7'4"x5'4"	lf	36.84	....	....	....
7'9"x5'8"	lf	....	38.60	....	....
8'0"x5'8"	lf	40.25	....	....	....
8'2"x5'10"	lf	....	40.00	....	....
8'8"x6'0"	lf	42.89	....	....	....
9'4"x6'3"	lf	51.72	....	....	....
Plate, expansn, bronze	lb	1.31	1.34	1.31	1.30
Project monuments	ea	34.96	36.46	34.89	35.07
Right of way markers	ea	....	6.08	....	....
Rock asphalt	t	....	14.68	....	14.42
Seeding&protect	sy	....	0.08	....	0.08
Sidewalk, conc, 4"	sy	....	3.76	....	3.68
remov	sy	....	0.52	....	0.61
Slides	cy	0.27	....	....	....
Slope protection	sy	4.94	4.90	5.62	4.97
Sodding	sy	....	0.72	....	0.71
Spring box, type A	ea	233.33	247.50	170.00	....
Steel, reinforcement	lb	0.13	0.124	0.13	0.12
structural	lb	0.258	0.189	0.22	0.24
Tar, RT-2, prime	gal	....	0.216	....	0.21
refined	gal	0.216	....	0.21	....
Timber, creosoted	Mbm	356.18	340.85	335.68	348.38
Trees or stumps, remov	ea	....	57.62	....	47.00
Water	Cgal	0.108	0.138	0.10	0.13

*RS—rural secondary

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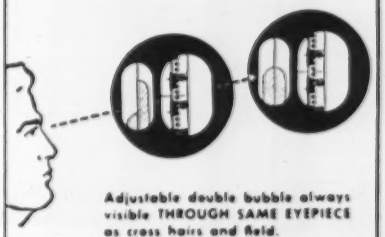

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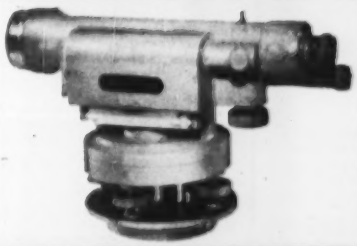

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☐ Combinations ☐ Tripods
☐ Theodolites ☐ Repair of present instruments, (any make)

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Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- * Feb 16 — Iron and Steel Products; Pipe
- * Feb 23 — Wood Products, Glass, Explosives, Chemicals
- * Mar 1 — Clay Products, Lime, Plaster Paint, Roofing; Wage Rates, Building Board, Lath, Insulation

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C.L lots cash, dis. not deducted			SAND AND GRAVEL Per ton, carload lots			CRUSHED STONE Per ton, carload lots		CRUSHED SLAG Per ton, carload lots, f.o.b. plant		CONCRETE BLOCK 8x8x16-in.* truckload del.* per block		CONCRETE Ready Mixed 1:2:4 ave. 50 c.y., del.
	Paper	Bulk	Mortar	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand grav.	Lt. wgt. agg.	
Atlanta	$4.12a	$3.71a	$3.61	$2.75	$2.75	$2.50‡	$2.14	$2.24	$1.45	$1.65	$0.18	$0.195	$13.25g
Baltimore	4.04a	3.63a	3.43	2.70‡a	2.70‡a	2.20‡a	2.75‡a	2.80‡a	1.95‡a	1.90‡a	.18	.18a	12.15
Birmingham	3.72	3.60e	.....	2.53n	2.53n	2.13n	2.75	2.75	1.35	1.55	.18	.18	11.55
Boston	4.67b	4.21b	4.47	3.00a	3.00a	3.00a	1.60a	1.75a	.....	.....	.23	.265a	14.00b
Chicago	3.98a	3.57a	3.72	3.60‡b	3.60‡b	4.00‡b	3.75‡b	3.75‡b	2.25‡	2.25‡	.23	.23b	13.50
Cincinnati	3.95c	3.55c	3.73	2.19‡c	2.24‡c	2.24‡•	2.54‡c	2.54‡c	.....	.....	.195	.225a	12.20
Cleveland	N.A. in C.L.	3.54e	.....	2.05ef	1.85f	1.65	4.10‡a	4.10‡a	3.35‡a	3.15‡•	.....	.23	15.45
Dallas	3.35a	2.95a	3.23	2.42	2.53	1.84	2.22	2.38	.....	.....	.11e	.2675	11.25
Denver	4.50a	4.00a	4.50	1.85	2.00	1.20	.....	.....	.....	.....	.23	.255a	10.70
Detroit	4.04a	3.45a	3.69	4.25‡b	4.25‡b	4.00‡b	3.75‡	3.75‡	3.50‡	3.50‡	.22	.22a	14.20
Kansas City	4.20b	4.00b	4.00	1.65	1.65	2.00‡a	2.00‡a	2.00‡a	.....	.....	.24a	.22c	13.25b
Los Angeles	4.92eA	4.46eA	5.40	2.41‡a	2.76‡a	2.41‡a	2.41‡a	2.46‡a	.....	.....	.145/m	.255m	12.95b
Minneapolis	4.35a	3.94a	3.86	2.70‡ag	2.70‡ag	1.60‡ag	3.25‡ag	3.25‡ag	.....	.....	.19	.....	13.35f
Montreal	3.11d	2.86d	.....	1.95‡a	2.20‡a	2.25‡a	1.95‡a	2.20‡a	.....	.....	.20	.20a	10.80k
New Orleans	3.55a	3.15a	3.48	2.44	2.44	2.00	.....	.....	1.45	1.65	.275	.....	13.65
New York	4.37a	3.96a	3.71	3.05‡k	3.05‡k	2.00‡k	2.80‡l	2.80‡l	.....	.....	.....	.....	15.70km
Philadelphia	3.88/4.27‡a	3.57/3.94‡a	3.73/3.78‡	2.85‡ap	2.85‡ap	2.35‡ap	2.70‡	2.80‡	2.00	2.35	.22/.28	.....	13.20de
Pittsburgh	4.15a	3.76a	3.75	2.40‡	2.40‡	2.20‡	2.60‡	2.60‡	2.15	2.15	.25d	.31	14.00
St. Louis	3.95/4.18e	3.50/3.76e	3.70/4.01	3.25am	3.10am	2.40/3.10am	1.60y	1.70y	.....	.....	.22	.28e	13.25
San Francisco	3.85e	3.39e	.....	2.02	2.02	2.12	2.17	2.17	.....	.....	.24	.28ef	12.15e
Seattle	4.30a	3.85a	.....	4.00‡lm	4.00‡lm	4.00‡lm	4.50‡lm	4.50‡lm	.....	.....	.28	.38	13.30p
Toronto	3.97	3.77	3.77	2.40	2.40	2.00	2.00	2.00	2.00	2.00	.25	.35c	14.15

‡ Delivered. * Prices incl. dealers discount except as noted.

CEMENT: *a Less 10¢ disc, 15 days. *b Less 2% disc, 15 days. *c Less 10¢ disc, 10 days. *d Truckload lots, deliv. 10¢ disc, 20 days. *e Truckload lots, destination price. *h LCL.

SAND GRAVEL, STONE & SLAG: *a Truck lots. *b Per cu. yd. *c 5 tons or more. *e ½". *f Pea gravel. *g Less 5% for cash. *h Less than 5 tons. *l Plus 5% mun. & prov. tax *j F.o.b. quarry. *k Barge lots asd. *l F.o.b. scow Hudson river. *m Less 2% for cash. *n F.o.b. cars. *o 1-3 mi zone. *p Add 10¢ for ea. add'l mi zone.

CONCRETE BLOCK: *a Cinder *b Waylite. *c Haydite. *d Calocrete *e 8⅛ x 8 x 12 in. *f 8 x 4 x 16. *g F.o.b. truck at job. *l Less 2% for cash *l F.o.b. plant San Rafael. *m F.o.b. yard.

READY MIXED CONCRETE: *a 5 cu. yds. or over del. Man. *b 25 cu. yds or more *c 10-100 cy. brackets. *d 1-3 mi. zone. *e 2,000 lb comp. *f 2,800 lb. comp. *g Less 25¢ disc, 15 days. *h Less 50¢ for cash. *l 5% off for cash. *j 2% off for cash. *k Federal tax included. Add 5% mun. & prov. *l 1-2½-3½. *m F.o.b. yard. *n Plus escalator clause. *o Add 15¢ for ea. add'l 3-mi zone.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10¢ per bbl. for payment within 15 days of date of invoice. Subject discount 10¢ per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For paper bags add 40¢ per bbl., net refundable.

	Bulk		Bulk		Bulk		Bulk		Bulk
Richard City, Tenn	$3.05†	Buffington, Ind	$3.10†	Steelton, Minn	$3.20†	Muskegon, Mich	$3.15†	Toledo, O	$3.15†
Clinchfield, Ga	3.05†	Independence, Kan	2.95†	Leeds, Ala	3.00†	Saginaw, Mich	3.15†	Milwaukee, Wis	3.20†
Kingsport, Tenn	3.05†	Hannibal, Mo	3.10†	Duluth, Minn	3.20†	Wyandotte, Mich	3.15†	Green Bay, Wis	3.15†
West Des Moines, Iowa	3.10†	Northampton, Pa	3.05†	Hudson, N. Y	2.75†	Buffalo, N. Y	3.25†	Ironton, O	3.15†
Nazareth, Pa	3.05†	Universal, Pa	3.20†	Alpena, Mich	3.05†	Oswego, N. Y	3.30†	Montreal City	2.56
Bath, Pa	3.05†	Waco, Tex. (+ 10¢ tax)	3.10†	Detroit, Mich	3.15†	Cleveland, O	3.15†	W. Winfield, Pa	3.20†

† Prices to hold for first quarter of 1956.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS FLUXES Per gal., 80-300 penetration		CUTBACK ASPHALT MC per ton		ROAD OIL Per gal.	ASPHALT EMULSION RSI Per gal.	
	Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8⅛ in. carload lots	Wood per sq. yd. 3½ in. 16-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Tank car	Tank car	Drums
Atlanta	.....	.....	.....	$27.60	$40.00	$0.115	$0.23	$0.114Fw	$0.276Fw	$0.15	$0.15	$0.25
Baltimore	150.00‡	.....	.....	21.50n	.....	.092e	0.182e	106wE	195wE	10e	.105e	0.195e
Birmingham	.....	62.00e	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	.....	.....	.....	22.00ap	35.00ap	22.00ae	30.00ae	06eFw	195•Fw	.095a	.095aG	.175aG
Chicago	155.00‡	85.00‡b	3.95/4.00‡j	20.85b	30.85b	19.85be	29.85be	106wH	185wH	.08b	.....	.....
Cincinnati	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland	.....	82.00d	5.15g	23.00A	.....	23.00A	.....	1025.1wF	.....	.....	.1025AG	.20AG
Dallas	e	40.00	e	24.05	43.09	.1016	2103	28.91	50.44	.098	.1187	1960
Denver	.....	80.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detroit	.....	111.00	.....	27.21	.....	27.21e	.....	1188wI	.....	.0968	.....	.211
Kansas City	e	e	e	8.00ef	.....	17.40e	.....	05•wI	.....	.065c	0.11	.....
Los Angeles	e	.....	e	17.00fmx	.....	17.00fex	.....	19.00dx K	.....	18.00dx	.0875j	.1875j
Minneapolis	.....	.....	2.97A	25.00	.....	25.00	.....	0.10he	.....	0.095	.1025	.....
Montreal	e	e	e	27.00n	39.60n	.135n	.198n	16.50wE	20.90wE	.132n	.197ns	.230ns
New Orleans	.....	.....	.....	17.50e	..... o	17.50es	..... o	085ewe	..... o	.085B	.085Bl	.....
New York	.....	.....	3.25f	23.80qCD	44.50qD	23.80qtCD	44.50qtD	1073wCDF	1939wDF	.....	.1073CD	1968D
Philadelphia	175/185	110/120	4.06	22.00	.....	.....	.....	065wF	.....	.095	.....	.....
Pittsburgh	165.00	48.00	4.60	27.00	38.00	.10	21	27.00E	40.00E	.098	.11	224
St. Louis	.....	.....	.....	18.76f	.....	.1704	.....	0863fwM	.....	0.1575	.13	.....
San Francisco	.....	70.00e	.....	20.00g	37.00g	20.00gke	37.00gke	21.00gN	38.50gN	19.75e	.09g	18
Seattle	.....	.....	.....	23.50e	37.50b	18.25be	.....	25.50K	.....	20.75be	.09b	10be
Toronto	.....	.....	4.03	33.80	45.84	0.19	0.24	0.20be	0.25be	0.20	0.20	24

h Delivered.

PAVING BRICK & BLOCK: *a CL. *b 3 x 4 x 8. *c 2¼ x 8¼ x 4. *d LCL, truck deliveries. *e Not used. *f 2" Interior 8¢ treat. *g 3" *h 2" tr, 8¢ *l 3 x 3½ x 8½. *j 2½", 6 lb. tr.

ASPHALTS: *a Price at plant, Everett, Mass. *b F.o.b. refinery, Lockport, Ill. *c F.o.b. Sugar Creek, Mo. *d F.o.b. refinery, El Segunda. *e F.o.b. Baton Rouge. *f F.o.b. Hartford, Ill. *g F.o.b. Richmond, Calif. *h F.o.b. Martinez. *i F.o.b. refinery, Baltimore. *j F.o.b. refinery, Inglewood, Calif. *k 50-110 penetr. *l Less than 100 penetr. *m 40-80 penetr. *n Fed. tax included; add 5% for mun. & prov. *o Drums not avail. Shipped in steel bbl. *p 60-70 penetr. *q 40-85 penetr. *r In customer's drums. *s Shipped in drums, per drum. *t 85-200 penetr. *u Per 100 gal. *v Per ton. *w Per gal. *x Also tank trucks. *y F.o.b. Oakland *z F.o.b. Edmonds *A F.o.b. refinery, Cleveland. *B F.o.b. Destrehan, La. *C Bulk. *D Prices based on transporting to Manhattan via truck. *E RC. *F Also RC. *G Also MS, SS. *H RC 0-5 incl. *I MC 4. *J MC, RC .0675. *K MC 3, 4 & 5. *L Ma. *M MC 1-5, RC 1-5, .089. *N MC 3. *P F.o.b. refinery Savannah: $0.09 gal., tank cars; $0.20 gal., drums.

BRUSH

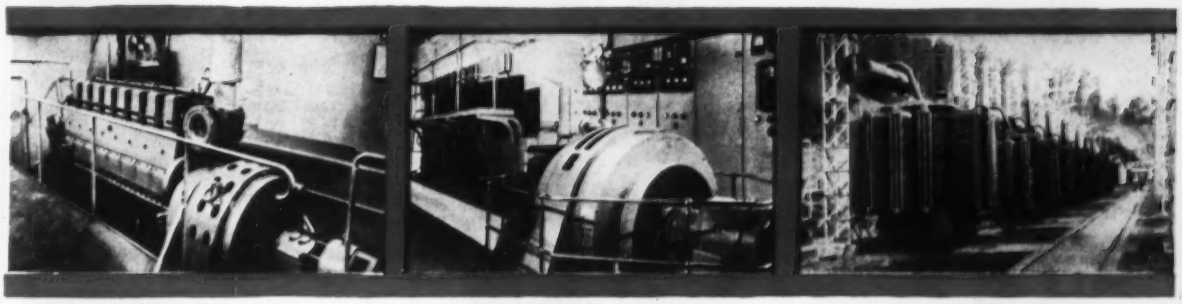
ZULULAND
Brush 2500 KW back pressure steam turbo-generator set installed in sugar mill.

PERSIAN GULF
Petter 5 HP aircooled diesel driving well pump. (A Shell photograph)

McLAREN

THAILAND
McLaren/Brush 55 & 65 KW diesel generator sets for rural electrification scheme.

POWER *wherever in the world you want it!*



National

SOUTH AFRICA
National R6AU8 400 KW diesel generator set installed in a newsprint plant in Capetown.

Mirrlees

BRAZIL
Mirrlees/Brush KS8 1040 KW 400 RPM diesel generator sets with Brush switchgear installed at Santa Lina.

BRUSH

TASMANIA
Bank of 12 Brush 10,000 KVA single phase 11,000/110,000 volts power transformers.

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Construction Scoreboard

Contract Awards
New Construction

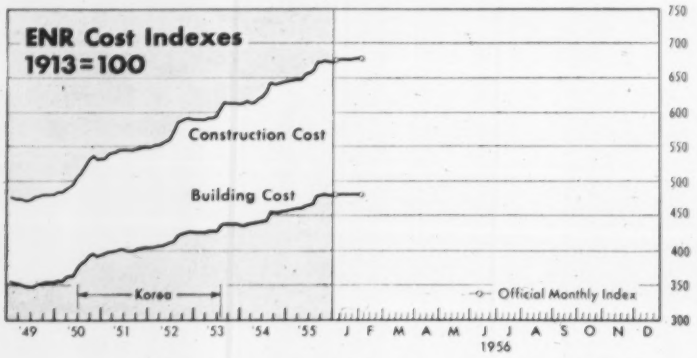
AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 6 wks 1956	Chge %
	$ millions		
Federal	$32.8	$253.8	+15
State and Municipal	107.8	744.2	+45
Total Public	140.6	992.0	+36
Total Private	399.3	1,663.7	+46
U. S. Total	$539.9	$2,665.7	+42
By Type of Work			
Waterworks	$3.4	$31.5	−12
Sewerage	7.1	126.2	+183
Bridges	14.9	78.6	+18
Highways	43.8	238.8	+32
Earthwork, Waterways	5.6	82.3	+44
Buildings:			
Public, Excl. Hsg.	33.9	249.5	+28
Public Housing	4.4	42.6	+453
Private Housing	271.5	770.3	+13
Commercial	57.9	330.8	+159
Industrial	58.1	507.3	+80
Unclassified	39.3	212.8	+17
U. S. Total	$539.9	$2,665.7	+42

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION

	Week of Feb. 2	Cum. 5 wks 1956	Chge '55-'56 %
	$ millions		
Corporate Securities	$3.4	$120.5	−55
State and Municipal:			
All Except Housg.	65.8	327.0	−5
Housing	...	...	−100
Federal Loans	...	8.8	+10
Federal Aid	...	...	...
Total Nonfederal	$69.2	$456.3	−30
Federal Appropriations:			
In U. S.	...	...	...
Outside U. S.	...	...	...
Total New Capital	$69.2	$456.3	−30



ENR INDEXES (1913=100), 20-cities' average	1956 Feb. 2*	% Change from last Month	% Change from last Year
Construction Cost	680.20	+0.6	+5.4
Building Cost	483.08	+0.5	+5.1

* Official Monthly Index for Feb. '56.

To convert above indexes to 1926=100: Divide Construction Cost by 2.080; Building Cost by 1.815. To convert to 1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.

WAGE RATES, 20 cities' average			
Common	2.117	+0.5	+4.9
Skilled (average 3 trades)	3.309	+0.3	+3.8
Bricklayers	3.565	+0.1	+3.1
Structural Ironworkers	3.291	+0.3	+3.8
Carpenters	3.070	+0.6	+4.5

MATERIAL PRICES, 20 cities' average			
Structural Steel, (3-mill average), per cwt	$4.600	0.0	+8.2
Lumber, 2x4 Fir, per M. fbm	121.666	+2.1	+5.0
Lumber, 2x4 Pine, per M. fbm	101.333	+0.3	+4.9
Cement, bulk, per bbl	3.684	+0.2	+4.8
Sand, per ton	2.417	+1.0	+5.0
Ready-mixed concrete, per cu. yd	13.181	+2.0	+6.2

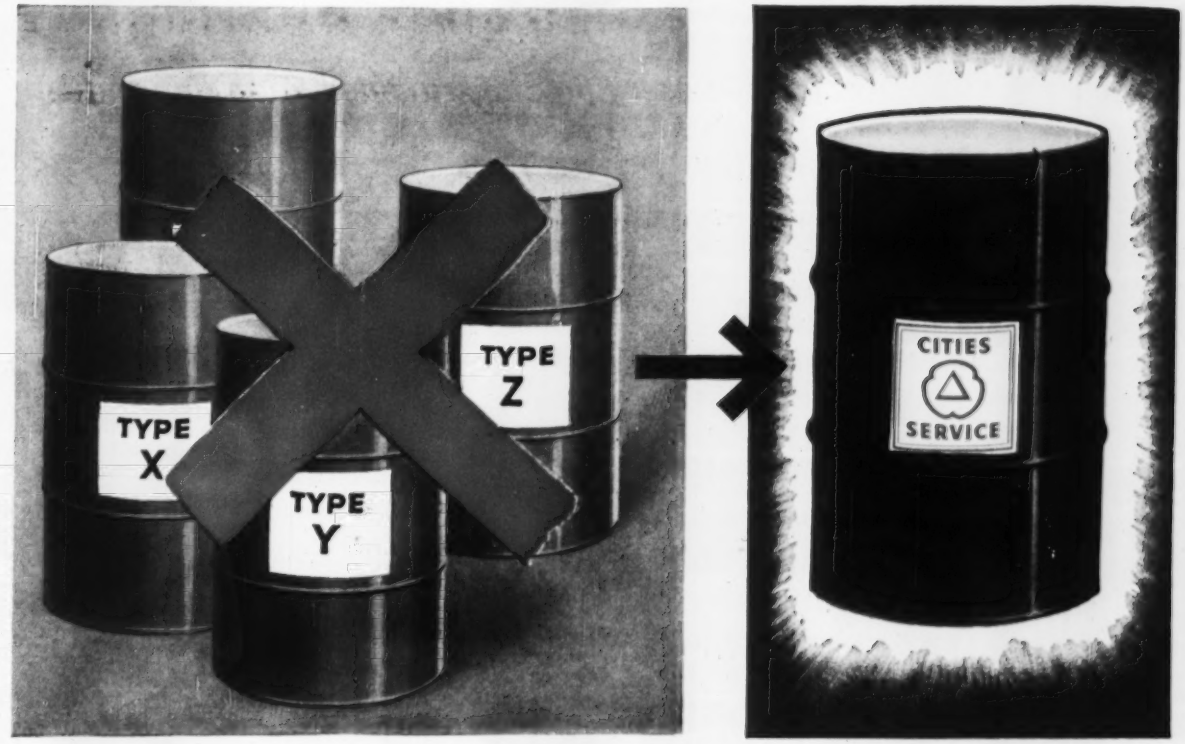
ENR INDEX REVIEW

	Construction Cost 1913=100	Construction Cost 1949=100	Building Cost 1913=100	Building Cost 1949=100	Volume 1913=100	Volume 1949=100
1955						
Feb.	645.24	135.26	459.43	130.60	459	133
Mar.	645.70	135.36	459.63	130.65	691	200
Apr.	647.49	135.74	460.62	130.94	609	176
May	653.26	137.01	462.55	131.65	731	211
June	655.96	137.51	464.82	132.13	633	183
July	660.09	138.38	467.52	132.90	699	202
Aug.	672.24	140.92	478.03	135.89	508	147
Sept.	672.74	141.03	479.15	136.20	576	166
Oct.	673.89	141.27	477.99	136.44	628	182
Nov.	673.20	141.13	479.30	136.25	561	162
Dec.	673.13	141.11	478.70	136.08	544	157
Annual Average	**659.72**	**138.31**	**468.80**	**133.33**	**600**	**173**
1956						
Jan.	676.36	141.79	480.48	136.58	645	186
Feb.	680.20	142.59	483.08	137.32	...	...

MATERIALS PRICE—SUPPLY TRENDS

- **Cement** still short in Kansas City and Philadelphia. San Francisco supplies becoming more plentiful with immediate deliveries.
- **Sand** prices move up in Birmingham and Chicago. Kansas City has shortage.
- **Crushed Stone** prices rise in Chicago. Shortage in Kansas City.
- **Concrete Block** prices up in Birmingham; may go up in Los Angeles.
- **Paving Brick** short in Chicago, Denver and Detroit. Birmingham prices increase.
- **Cutback Asphalt** and road oils advance in Chicago and increases are rumored for paving asphalt, fluxes and binders. Minneapolis sources forecast asphalt price increases "next month."

For record of ENR cost indexes for preceding years see folded insert chart ENR September 29, 1955. Extra copies of chart are available at 50 cents.



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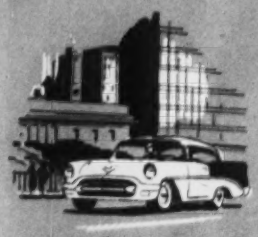

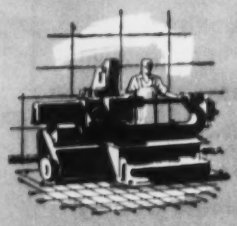

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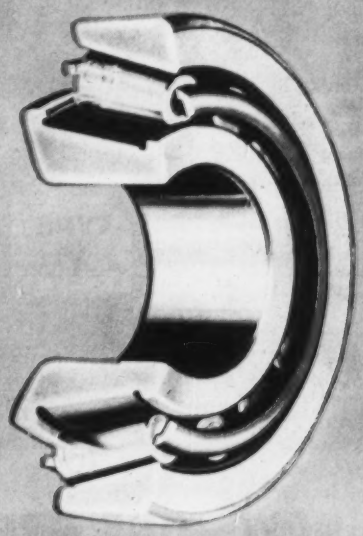

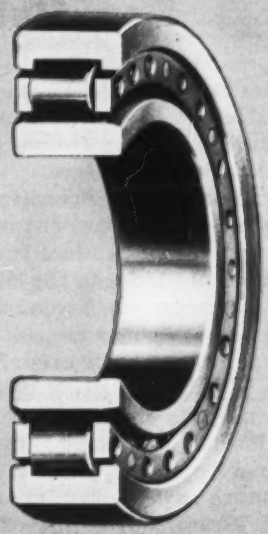

BOWER ROLLER BEARINGS

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Contract Awards Set January Record

Surge in commercial, industrial, highway, sewerage work carries total 5% over previous high; housing declines

Contractors have closed the books on the best January on record for contract awards in the heavy construction field.

Awards during January poured in at an average rate of $398 million per week, setting a new all-time high for the month, 5.5% better than the previous record of $377 million a week posted in January '53. Total January awards of $1,592.8 million ran 23% ahead of a year ago.

Private work added up to a fat $866.8 million, 8% ahead of January '55, despite a 16% decline in private mass housing awards. But public projects zoomed up even more spectacularly. The January total for public work was $726 million, 48% above a year ago, and a new record for the month.

• **Private awards**—Industrial building contracts totaled $259.2 million, 13% over January '55, and the best January for this type of work since 1953. Commercial building awards of $198.7 million shot up 106% over a year ago. The gains were distributed throughout all sections of the nation. Even private bridge work perked up. The January volume of $806,000 was more than four times as great as the same month in '55.

Private mass housing was the only major disappointment in January. Awards dropped to $373.3 million, as against $422.3 million in January '55. However, on a weekly average basis, mass housing contracts ran 6% ahead of the December '55 rate.

• **Public Works**—Sparked by the best volume of January highway awards on record, state and municipal work piled up $531.4 million in awards, up 63% over last year. Highways contributed $146.5 million to the total, up 23% over the year ago figure.

Public housing and other public building turned in a good performance in January. Public housing totaled $34.9 million and other public buildings added up to $193.2 million, 20% over January '55, and the best January since '53.

Sewerage and earthwork projects helped to swell the month's public works totals. A major Allegheny County (Pa.) Sanitary Authority sewerage job boosted the national total to $112.2 million, the best January in five years, and a 403% jump over last year.

Flood repair projects on both the East and West Coasts lifted earthwork and waterways awards to $73.9 million, up 112% over January '55.

Unclassified public projects, including airport and military construction, ran 26% ahead of January 1955. Bridge work is 8% over a year ago. Among public projects, only waterworks construction shows a drop (22%) from January '55.

• **Regions**—The Middle Atlantic states accounted for about 40% of the nation's contract awards in January.

More than half of all industrial and commercial contracts were reported in the Middle Atlantic region. In fact, sharp declines in industrial awards (compared with December and January '55) were reported for every region except the Middle Atlantic and the South.

On the other hand, commercial building awards continued at a high level in all regions last month, with the eastern coastal states and the South particularly strong.

While the national total for private mass housing awards was down 16%, some regions raced along at a fast clip. The West of the Mississippi region chalked up the best month since July 1954. In New England, homebuilding in January doubled the December volume and skyrocketed

ENGINEERING CONSTRUCTION CONTRACTS—JANUARY 1956

ENGINEERING NEWS-RECORD *reports contineental U. S. Construction projects at the following minimum costs—Waterworks, excavation, drainage and irrigation,* $44,000; *other public works,* $73,000; *industrial buildings,* $92,000; *other buildings,* $344,000

Four Weeks—Thousands of Dollars (000 Omitted)

	January, 1956						Total U. S.		%	Canada
	New England	Middle Atlantic	South	Mid-West	West of Mississippi	Far West	January 1956	January 1955	Change '55 to '56	January 1956
Public Works										
Waterworks	558	6,251	1,527	4,217	4,243	2,664	**22,460**	29,011	— 23	1,145
Sewerage	1,604	86,085	5,850	10,968	3,996	3,617	**112,210**	22,255	+ 404	1,449
Bridges	5,390	12,086	2,949	2,215	9,225	6,763	**38,637**	36,336	+ 6	8,225
Earthwork and waterways	1,848	32,665	11,987	380	9,884	17,138	**73,902**	34,835	+ 112	10,485
Streets and roads	24,948	14,998	20,561	32,382	33,337	20,282	**146,508**	118,743	+ 23	7,552
Public buildings, residential	1,130	4,741	16,180	3,807	5,529	3,404	**34,782**	4,158	+737	13,560
Other public buildings	16,261	97,561	9,805	18,637	23,501	27,450	**193,245**	161,284	+ 20	18,524
Unclassified	9,124	21,359	21,255	10,653	30,964	10,918	**104,273**	82,112	+ 26	4,231
Total public	**60,992**	**275,746**	**93,114**	**83,259**	**120,670**	**92,236**	**726,017**	**489,034**	**+ 48**	**65,111**
Federal government (included in above classifications)	11,812	41,610	51,061	11,564	44,147	34,395	**194,589**	163,233	+ 19	24,405
Private										
Bridges	.....	306	.....	.....	500	.....	**806**	200	+303	.....
Industrial buildings	6,770	143,027	32,457	46,560	23,868	5,848	**259,160**	228,529	+ 13	17,904
Mass housing	16,605	123,949	3,854	68,155	145,485	15,157	**373,205**	442,331	— 16	22,566
Commercial buildings	15,839	103,343	13,754	29,267	27,412	9,144	**198,759**	96,513	+106	14,180
Unclassified	.....	2,350	436	74	27,580	1,450	**34,890**	38,703	— 10	5,566
Total private	**39,214**	**373,575**	**50,501**	**144,086**	**224,845**	**34,599**	**866,820**	**806,276**	**+ 8**	**60,246**
Total Engineering Construction:										
January, 1956—4 weeks	**100,206**	**649,321**	**143,615**	**227,345**	**345,515**	**126,835**	**1,592,837**	.....	**+ 23**	**125,357**
December, 1955—5 weeks	116,102	381,933	190,758	424,079	388,669	191,510	**1,693,051**	.....	.....	457,386
January, 1955—4 weeks	67,162	408,078	92,449	251,851	302,414	173,356	.....	1,295,310	.....	85,535
% Change '55 to '56	+49	+59	+55	−10	+14	−27	.....	.....	.....	+47

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700% ahead of the same month in '55. The Middle Atlantic states also topped their December volume in residential building and were not far below January '55.

The Middle Atlantic states also cornered more than a third of the public works contracts in January, principally because of an unusually heavy volume of sewerage and public building awards (excluding public housing). Roadbuilding awards were concentrated in the Midwest and West of the Mississippi regions.

Housing Funds

Mutual savings banks set mortgage holdings record

The nation's 527 mutual savings banks added $227 million to their mortgage holdings during the month of December, making it the best December since 1947.

During 1955 as a whole, the mutual savings banks increased their mortgage portfolios by $2,450 million. It was the biggest jump in mortgage investments on record.

The total holdings show the importance of the mutual savings banks as a source of housing funds. These banks now hold mortgages with a total value of $17,294 million. Mortgages, in fact, now represent 55.2% of their total assets.

But while the banks have been channeling more money into housing, they have been cutting back elsewhere. Holdings of corporate and municipal securities dropped $157 million.

ENR Cost Indexes Move Up As Lumber Prices Advance

Scattered wage increases and rising lumber prices pushed the ENR cost indexes higher again this month.

The Construction Cost Index is now up to 680 and the Building Cost Index has risen to 483. Both indexes are based on 1913 = 100. The new construction cost figure is up 0.6% over January, and the Building Cost Index is up 0.5%.

Since December, the Construction Cost Index has gone up 1.1%—or seven points while the Building Cost Index has moved ahead nearly 1% in the first two months of the year. Both indexes show a more rapid rise in costs this year than in January and February of '55.

Part of the cost rise reflects the recent West Coast flood damage. The floods hampered logging operations and mill production.

Lease-Purchase

GSA gives green light to first of 26 projects

The slow-starting lease-purchase program may be ready to move into high gear. General Services Administration has approved plans for the first building in its big construction program.

The first project is a post office and courthouse for Council Bluffs, Iowa, expected to cost about $1.3 million.

With the basic plans approved in Washington, GSA Region 6, with headquarters in Kansas City, Mo., will handle the next steps—taking bids for financing and constructing the project.

The Council Bluffs building is the first of 26 similar GSA lease-purchase projects for which designs have been approved. These projects also have been approved by the Budget Bureau and the Public Works Committees of the Senate and House.

Total cost of the first 26 projects will be about $91.5 million. But this is only the forerunner of a program that will add up to some $376 million—if Congress goes along with the President's recommendations in his Budget Message.

Road Revenues

Maine 'Pike net income shows continuing rise

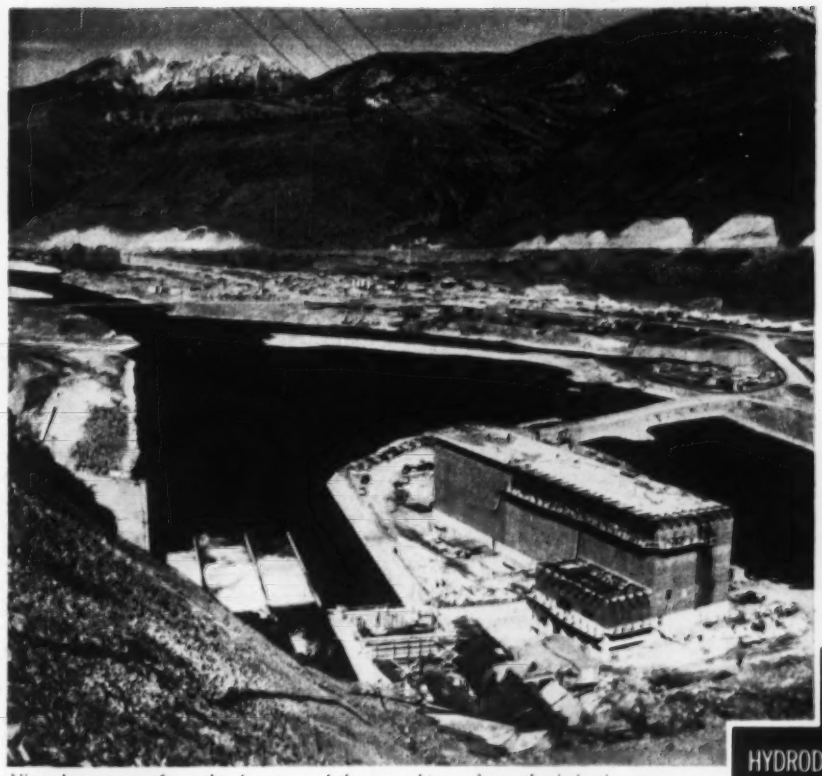
The main stem of the Maine Turnpike, between Portland and Kittery, showed another increase in net revenue during 1955, the Maine Turnpike Authority reported last week.

The second part of the state's turnpike system, an extension from Portland to Augusta, was officially opened to traffic Dec. 31 and revenues from it are not shown in the figures of the current report.

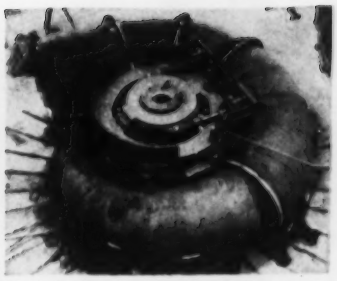
The net for 1955—before deposits to reserve and maintenance fund, and payment of interest—was $1,545,783. That figure is the fifth to show a gain in net income since the turnpike was first opened to traffic in 1951. In 1951, net reported before payments to reserve and interest was $929,419. The 1952 figure was $1,166,940. In 1953, it climbed to $1,305,680, and then, in 1954, moved up to $1,389,693.

Biggest users of the superhighway in 1955 were passenger vehicles, 180,837 of which were clocked through the toll gates. Trucks of all classes totaled 25,134.

(*B&F continued on page 81*)

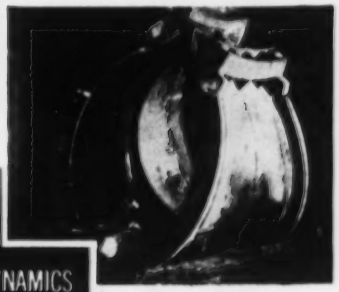


View downstream from the dam toward the powerhouse shows the irrigation bypass (left), penstock (center) and tail-race canal (right). *(U.S.B.R. photo)*



Final check assembly of Unit #2 – a complete scroll case, pit liner, distributor gates and operating mechanism – is made in SMS shops prior to shipment to the site.

Welding a flange to a section of Unit #3's spiral steel case. SMS shops are completely equipped to fabricate weldments of the largest types.



HYDRODYNAMICS

MILE-HIGH SMS-FRANCIS TURBINES SOON TO DELIVER POWER AT PALISADES

High on the south fork of Idaho's Snake River, the first of four SMS-Francis turbines at Palisades Dam is scheduled to go on the line in 1956. The Palisades Dam, which is the Bureau of Reclamation's largest earth-filled dam, is primarily an irrigation project. The dam will have a crest length of 2,100 feet, rise 270 feet above the streambed, and provide a storage reservoir some 20 miles long and 3 miles wide.

Four vertical SMS-Francis turbines will be installed to produce a total capacity of 114,000 kw. Designed to operate at a site more than a mile above sea level, each unit is rated at 39,500 HP under a 190-foot head. The power generated will serve southeastern Idaho, where Atomic Energy Commission facilities and a growing phosphate industry now tax the existing electric supply.

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Middle-Income Housing Shows Gains in New York

The New York State program which grants direct aid for limited-profit rental and cooperative housing projects is off to a good start and may serve as a model for other states, according to New York State Housing Commissioner Joseph P. McMurray.

Although only $50 million in state loans have been authorized to date (the program is still fairly new), applications for specific projects now add up to more than $300 million, McMurray told the National Citizens Housing Conference.

Business Briefs . . .

• **Housing optimist**—Calling earlier estimates of 1,200,000 housing starts in '56 "too pessimistic," HHFA Administrator Albert Cole told a home-builders group to look for 1,300,000 housing starts this year.

• **Steel expansion**—Lone Star Steel Co., Lone Star, Texas, plans to enlarge its plant, with improvements to include a stretch mill, electric furnace, tailings dam, and pipe mill improvements. Estimated cost: $80 million.

• **Maryland public works**—The Maryland Department of Public Improvements this year is planning to put $25 million to $30 million worth of previously-authorized construction projects under contract. For the coming fiscal year, Governor Theodore McKeldin proposed bond issues totaling $14.1 million to finance additional state work. Biggest item is the $11-million State Office Center in Baltimore.

• **Growth industry**—Home improvement is "the greatest growth industry in America" today, according to John R. Doscher, executive director of Operation Home Improvement. Doscher told a retail lumber dealers group that potential new business in the home improvement field totals $8 billion to $12 billion.

• **Interlake Iron expands**—Interlake Iron Corp. will spend $10 million to modernize and expand its Chicago plant.

• **Ford foundry**—Ford Motor Co. has announced plans to build a new aluminum foundry and forging plant at Listerhill, Ala. The foundry will adjoin a new aluminum reduction plant to be built by Reynolds Metals Co. Estimated cost of the new facility is a minimum of $30 million.

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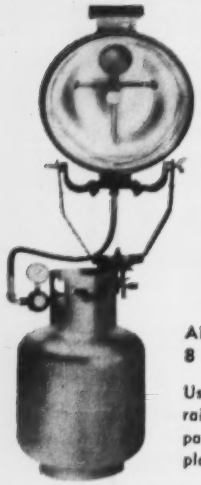

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Building Trades Raise Their Sights

Plans laid for massive membership drive at mid-winter meeting as unions take firm stand on maintenance work

Last week, the building trades mapped out plans for the biggest membership drive in their history and again served notice of their determination to swing industrial construction and maintenance work away from production workers to their own members.

Details of the organization drive—with the conversion of 1,000,000 non-union members as its goal—were roughed out at the Miami mid-winter meeting of the AFL-CIO Building and Construction Trades Department, being held concurrently with the first meeting of the powerful AFL-CIO Executive Council.

With special emphasis on nation-wide home building and on industrial construction in the South, the ambitious membership drive came as a surprise to other union officials. Never before have the craft unions banded together for a mass organizational campaign on such a scale.

• **Membership plans**—Although plans for the drive have not yet been formalized, craft union officials last week told ENR that they may shape up this way:

• A special assessment may be levied on the department's 16 unions to finance the program.

• Taking a clue from the successful, but limited work of the organizing committee of four craft unions in heavy construction, the department is seriously considering both a no-strike pledge to non-union contractors and the cutting of craft wage scales in lower-pay areas, where this seems necessary.

These four unions—operating engineers, carpenters, teamsters and laborers—banded together two years ago, primarily to ward off John L. Lewis' United Mine Workers who were moving into road construction work. But the group since then has taken on the organization of non-union workers with some success.

The organizing committee, headed by the department's president, Richard J. Gray, and its secretary-treasurer, Frank Bonadio, includes representatives of the Electrical Workers union as well as members of the operating engineers, carpenters, teamsters and laborers unions.

The promise of labor peace to all contractors approached by the craft unions is considered a prime factor in the program. It means too, that organizing efforts will, at least in part, be directed at contractors rather than construction workers.

The biggest number of non-union construction workers is in home building, with an estimated 40% now under union contract. The campaign in the South is aimed at the growing industrial construction in that area, where unionization is far behind the rest of the country.

• **Industrial jurisdiction**—At the same time, the department had its first clash with United Auto Workers president Walter Reuther over doing construction and maintenance work in industrial plants. This issue was a major worry to craft unions in the AFL-CIO merger.

The explosive problem has erupted at the Detroit plant of Studebaker-Packard, where the craft unions claim the right to relocate plant equipment required in conversion to the manufacture of jet aircraft engines under government contract.

With time a big factor in filling the contract, both UAW members and craft employes have worked side-by-side for a time, but the building trades insisted on handling all the installation work, rejecting a UAW arrangement to use craft workers in addition to its members.

The situation appeared to be a show down by the building trades to settle the issue, once and for all.

Reuther's argument is that UAW has the Studebaker-Packard contract and that the work is not new construction but only the rearrangement of machinery.

"I assumed it could be worked out on a reasonable basis," said Reuther, "but instead the building trades in Detroit are issuing mandates and threats. Everybody's rights should be protected, but we're not going to be pushed around and we're not going to be threatened."

The dispute is expected to end up in the hands of the new Building Trades-Industrial Union Department Committee, which Reuther heads along with Peter J. Schoemann of the plumbers union, before the AFL-CIO conclave winds up this week.

For the building trades, another headache within their own ranks,

stemmed from a dispute with five new locals of the teamsters union in the New York area.

In a complaint filed by the New York Building and Construction Trades Council, its members charged the locals with seeking contracting work for plumbing, paving, sheet metal work and other construction activities, at rates far below construction union schedules.

Pacific Northwest Units Making Contract Progress

Contractors in western Washington have reached agreement on new labor contracts with every union except one, promising a peaceful 1956 for the industry.

The single exception is the cement finishers union, two locals of which were still negotiating last week with the AGC. Everett cement finishers have already agreed to a two-year contract, granting 18 and 10-cent raises which boost the present scale to $2.90.

Carpenters and laborers began operating under new three-year contracts Jan. 1. Carpenters then received a 14-cent increase, bringing their scale to $2.80, plus 10 cents in health and welfare. Additional raises of 10 cents each become effective in 1957 and 1958. Laborers' rates were boosted 12 cents to $2.37, with 10-cent raises scheduled for each of the next two years. An escalator clause protects both crafts from the effects of increases in the cost of living.

Teamsters and ironworkers are winding up two-year contracts this year. Present scales for teamsters range from $2.63 to $3.00; for ironworkers, the range is $2.87 for reinforcing men to $3.07 for structural steel workers.

Labor Briefs . . .

• **A union gift**—The AFL-CIO has given the New York School of Industrial and Labor Relations at Cornell University $7,500 to finance research in problems of labor law.

• **Portal pay for sandhogs?**—A dispute over whether sandhogs should get paid for the time it takes to walk through the tunnel to the working face stalled work again last week on the recently flooded third tube of the New York-New Jersey Lincoln Tunnel. The sandhogs claim their time should be counted from the first air lock—now 15 minutes away from the working face.

OFFICIAL PROPOSALS

Bids: March 9, 1956

ADVERTISEMENT

Town of Bethlehem, N. Y.

NOTICE TO CONTRACTORS

Notice is hereby given that sealed bids or proposals in sealed plain wrapper bearing the appropriate identification "Bid for Transmission Main and Distribution Reinforcement, Contract No. 5," will be received by the Board of Water Commissioners at its office in the Town Hall, Town of Bethlehem, Delmar, New York at 7:30 P.M. Eastern Standard Time on the 9th day of March, 1956, and then will be publicly opened and read aloud at a meeting of said Board, to be held at such time and place.

The work includes approximately 500 feet of 24" pipe line from the reservoir dike to the filtration plant; 2300 feet of 16" main from the filtration plant by the softener plant; interconnections between the proposed main and the existing mains in the vicinity of the softener plant; 43,000 feet of 16" transmission main from the softener plant to designated points within the distribution system; various connections between the proposed transmission main and the existing, paralleling transmission mains; Venturi and regulating chambers; 8,000 feet of 12" distribution reinforcement; pavement restoration and other appurtenant work.

Copies of the plans and specifications may be examined at the office of the Town Clerk of the Town of Bethlehem, New York, 353 Delaware Avenue, Delmar, New York, or at the office of the Engineers, Benjamin L. Smith & Associates, 11 North Pearl Street, Albany, New York; copies thereof may be obtained from the Board and/or Engineers upon payment of Twenty Dollars ($20.00) for each set of plans and specifications.

Proposals must be submitted on the blank forms provided and in a manner designated therein. Each proposal must be accompanied by a Bid Bond or certified check in an amount equal to Five Per Cent (5%) of the total bid. The Bid Bond or Certified Checks of all but the three lowest bidders will be returned within ten days after the opening of bids, while the remaining bonds or checks will be returned as soon as a contract has been executed. The Bid Bond or Certified Check of the successful bidder will be retained to pay any loss of damage to Water District No. 1 and/or the Town of Bethlehem, in the event said successful bidder shall refuse or neglect to enter into a contract in accordance with his proposal. Acceptance of the bid will be contingent upon the fulfillment of this requirement by each bidder.

The Board of Water Commissioners reserves the right to consider bids for a period of Forty-Five Days after their opening, and the right is reserved to reject all bids.

BOARD OF WATER COMMISSIONERS,
WATER DISTRICT NO. 1,
TOWN OF BETHLEHEM, NEW YORK
BY: Harold C. Barkhuff, Chairman

Bids: February 29, 1956

Pennsylvania Turnpike Commission
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 10:00 a.m., Eastern Standard Time, the 29th of February 1956, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room #1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

Contract No.	Interchange	Connecting Route	County
553-B	Mahoning Valley	U.S. 209	Carbon
554-B	Pocono	Pa. 940	Carbon
555-B	Wilkes-Barre	Pa. 115	Luzerne
556-B	Wyoming Valley	Pa. 315	Luzerne
557-B	Scranton	U.S. 6 and 11	Lackawanna

Each Contract Number will be bid separately.

The work to be performed under each of the above contracts consists of the Construction of Heating System for the Utility Building and Toll Plaza and all work incident thereto at each of the interchanges. The Utility Buildings and Toll Plazas are to be constructed by others. Plumbing and Electrical Work will be installed by others.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on 9 February 1956 at the office of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania, at the Commission's Field Office in Conshohocken, Pennsylvania, 10th Avenue and Hallowell Street and at the Commission's Field Office in Lehighton, Blakeslee Boulevard, Lehighton, Pennsylvania. Plans, specifications and other contract documents will not be available before this date for mailing to prospective bidders.

Plans and contract documents for each location may be obtained from the Commission upon deposit of ten ($10.00) dollars for each set. No refund will be made for plans and/or contract documents returned, unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five ($5.00) dollars per copy.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The Pennsylvania Turnpike Commission reserves the right to waive any informalities in or to reject any or all bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
31 January 1956

OFFICIAL PROPOSALS

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4625) will be received at Ephrata, Washington, until March 20, 1956, for furnishing labor and materials for Earthwork and Structures for Part 4-Block 18 Laterals, Wasteways, and Drain, East Low Canal Laterals, Columbia Basin Project, Washington. Location near Mesa, Washington. Principal items are 156,600 cu. yds. excavation; 260 cu. yds. concrete in structures; 5,600 lin. ft. concrete pipe; 2,500 pounds miscellaneous metalwork; and other work. Completion time 200 days. For particulars, address Bureau of Reclamation, P. O. Box 368, Ephrata, Washington; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4630) will be received at Ephrata, Washington, until March 6, 1956, for furnishing labor and materials for Evergreen Pumping Plant, Block 77, Columbia Basin Project, Washington. Location near Quincy, Washington. Principal items are 2,800 cu. yds. excavation, common; 14,600 cu. yds. excavation, rock; furnishing and handling 2,670 barrels cement; furnishing and placing 208,400 pounds reinforcement bars; furnishing and erecting 129,000 pounds steel for pumping plant superstructure; and other work. Completion time 420 days. For particulars, address Bureau of Reclamation, P. O. Box 937, Boise, Idaho; P. O. Box 1078, Quincy, Washington; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specification No. DC-4620) will be received at Ephrata, Washington, until March 13, 1956, for furnishing labor and materials for the construction of Wahluke Siphon, Station 0+00 to Station 159+05; Wahluke Branch Canal; and PE 16.4 Wasteway, Station 577+40 to Station 677+25, Columbia Basin Project, Washington. Location near Othello, Washington. Principal items are 281,000 cu yds. excavation; 7,500 cu. yds. concrete in structures; 2½ miles concrete pipe in siphon, 15'-4" diameter, alternative monolithic or precast concrete pipe; ½ mile plate-steel pipe in siphon, 15'-6" diameter; and other work. Completion time 800 days. For particulars, address Bureau of Reclamation, P. O. Box 368, Ephrata, Washington; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.10 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record, 330 West 42nd Street, New York 36, N. Y.

Bids: February 23, 1956

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS,

ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time, on the 23rd day of February 1956, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

Contract No.	County	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 5, E. G. H. YOUNGMANS, District Engineer, 65 Court St., Buffalo 2, N. Y.						
E.T. 56-7	Erie	New York State Thruway—Erie Section—Sub. E-6-A (Four Mile Level Road to Cain Road): Angola-Brant-Farnham, S. H. 642 and 3 Secondary Roads	4.91 (1.45) 4.89 Miles (Acc.)	9" Two Crse. Cem. Conc. Pavt. 2 @ 25' Wide = Asp. Conc., Opt. = 1.06 Miles Asp. Conc., Ty. 2B = 0.24 Mile Misc. Work = 0.17 Mile 4 Hy. Segs. Comp. I-Beams 196.5', 381.8', 329.5 and 337.5'	$185,000 Plans $50	$3,278,000
DISTRICT No. 8, J. S. BIXBY, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.						
H.T. 56-1	Westchester	New York State Thruway—Hudson Section—Subs. 10 and 11 (Tuckahoe Road-Tarrytown) (St. Mary's Cemetery)	....	Asp. Conc., Opt. and Misc Work	$1,100 Plans $10	20,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

The right is reserved to reject any or all bids. JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: February 28, 1956

Water Works Construction Geneva, N. Y.

NOTICE TO BIDDERS

TAKE NOTICE that, in accordance with all laws applicable hereto, sealed, written proposals or bids will be received by the Board of Public Works, City of Geneva, New York at the office of the Board of Public Works, City Hall, Geneva, New York, until 7:00 P. M., on the 28th day of February, 1956, for the furnishing and installing of about 4100 feet of 20" pipe main along Hamilton Street and about 2600 feet of 8" pipe main on North Genesee Street, West Avenue and Mill Street, together with valves, fittings and appurtenant structures in accordance with plans and specifications which may be obtained at the office of the Board of Public Works, City Hall, Geneva, New York, and at the office of Donald E. Stearns P. E., Civil and Sanitary Engineers, Cazenovia, New York upon request made to and depositing the sum of $15.00 with said Board of Public Works, to be held as security for their return, pursuant to law. All bidders shall receive a $15.00 refund for all plans and specifications returned in good condition. Non-bidders shall receive a $7.50 refund for all plans and specifications returned in good condition.

After opening and reading said bids, said City reserves the right to reject any or all bids, to readvertise for new bids, to waive any informality in bids received, and to accept that bid which, in its judgment, best serves the interests of the City of Geneva, New York.

BOARD OF PUBLIC WORKS
Harry M. Bolton, Supt.

January 31, 1956.

Bids: March 8, 1956

Moses Lake Flight Center Larson Air Force Base, Washington

ADVERTISEMENT FOR BIDS
BOEING AIRPLANE COMPANY

Sealed bids are hereby invited for the construction of an eight-place hangar, including earthwork, paving, utilities and miscellaneous items of work at Moses Lake Flight Center, Larson Air Force Base, Grant County, Washington, for the Boeing Airplane Company, Seattle Division.

The work includes but is not limited to the following:

(1) 8-place hangar structure, complete.
(2) Excavation, fill, grading and subgrade preparation.
(3) Concrete hangar apron and yard paving.
(4) Asphaltic concrete parking area, road, and fire lanes.
(5) Drainage; storm and sanitary.
(6) Modifications to fire protection reservoir.
(7) Domestic and fire protection water lines.
(8) Air piping from existing Service Building.
(9) Steam generating unit and accessory work in existing Service Building and steam supply and return lines for the hangar.
(10) Electrical distribution and communications systems.
(11) Modifications to existing Service Building.
(12) Oxygen storage facility.
(13) Underground gasoline storage tank at existing Oil Storage Building.
(14) Blast fence.
(15) Gun Firing Facility.
(16) Runway Threshold Lighting.
(17) Taxiway Revisions.

This contract will constitute a sub-contract under a prime contract between Boeing Airplane Company and the United States Government.

Bid, Performance and Payment bonds will be required.

Not more than three (3) sets of contract documents may be obtained by each general contractor bidder, whether a single firm or joint venture on or about February 6, 1956. Subcontractors may obtain one (1) set only of complete documents or one (1) set only of partial documents pre-assembled for certain major sub-contract phases of the work. A deposit of one hundred dollars ($100.00) in the form of a certified check will be required on each complete or partial set upon application at the offices of Naramore, Bain, Brady and Johanson, Architects and Engineers, 904 Seventh Avenue, Seattle 4, Washington. Deposits will be refunded upon return of document sets in good condition to the offices of the Architect-Engineer within two (2) weeks following opening of bids.

Complete sets of bid documents will be available for inspection by prospective bidders at the following locations:

Naramore, Bain, Brady & Johanson, 904 Seventh Avenue, Seattle 4, Washington.
Naramore, Bain, Brady & Johanson, Moses Lake Flight Center, Moses Lake, Washington.
Associated General Contractors of America, 215 W. Harrison, Seattle, Washington.
Plan Bureau, 2412 Western Avenue, Seattle, Washington.
Mountain Pacific Chapter of Associated General Contractors, Benjamin Franklin Hotel, Seattle, Washington.
Associated General Contractors of America, 452 St. Helens, Tacoma, Washington.
Construction Council, Spokane Hotel, Spokane, Washington.
Associated General Contractors of America, Eastern Washington Builders' Chapter, 1207 N. Washington, Spokane, Washington.
Associated General Contractors of America, So. 102 Stevens, Spokane, Washington.
Builders' Exchange, Builders Exchange Building, Portland, Oregon.
Associated General Contractors—Central & Northern California, 850 Battery, San Francisco, California.
Southwest Builders & Contractors, 1660 Beverly Blvd., Los Angeles, California.
F. W. Dodge Corporation, Thomas Building, Dallas, Texas.
F. W. Dodge Corporation, 700 Merchandise Mart, Chicago, Illinois.
Builders' Exchange, National Building, Minneapolis, Minnesota.
Wenatchee Construction Council, Wenatchee, Washington.
Columbia Basin Construction Council, Inc., 606 W. 3rd, Moses Lake, Washington.
Associated General Contractors of America, 2102 Crawford, Houston, Texas.

Sealed bids will be opened and publicly read at 2:00 P.M., P.S.T., March 8, 1956 in the Engineering Building, Boeing Airplane Company, Seattle, Washington.

OFFICIAL PROPOSALS

Bids: March 8, 1956

Contract No. 32

DELAWARE INTERSTATE HIGHWAY DIVISION
NOTICE TO BIDDERS
BRIDGE AND ROADWAY MODIFICATIONS
FOR DELAWARE MEMORIAL BRIDGE AND APPROACHES

Sealed proposals for the construction of bridge and roadway modifications along the approaches to "The Delaware Memorial Bridge" over the Delaware River near Wilmington, Delaware, will be received by the Delaware Interstate Highway Division at the Administration Building, Delaware Memorial Bridge near Wilmington, Delaware, until 12 o'clock noon Eastern Standard Time, March 8, 1956, at which time and place said proposals will be opened and read.

The work to be performed under this Contract includes the furnishing of all plant, equipment, materials, labor and all else necessary for the construction of (a) installation of expansion joints and the construction of adjoining slab sections in the concrete pavement adjacent to both abutments of the Delaware Memorial Bridge, the Pennsylvania Railroad Overpass, the New Castle Avenue Overpass and the North and West Bridges of the Farnhurst Interchange, and adjacent to the east abutment of the East Bridge of the Farnhurst Interchange; (b) macadam paving of both outside shoulders for certain lengths adjacent to all the abutments specified in (a) above except those of New Castle Avenue Overpass; (c) repair of roadway expansion joints at both towers of the Delaware Memorial Bridge; and (d) repair of the southwest link of the west tower.

Work on Contract No. 32 shall begin promptly after the execution of the Contract and shall be completed on or before June 15, 1956.

Monthly payment will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Division.

Each proposal must be accompanied by an acceptable surety bond or certified check to the amount of at least ten (10) per cent of the total amount of the proposal.

The Contract will be awarded or proposals rejected within twenty (20) days from the date of opening proposals. The right is reserved to reject any or all bids.

The Plans and Specifications and other contract documents may be examined after February 13, 1956, at the Administration Building of the Delaware Memorial Bridge in New Castle, Delaware. Contract documents may be obtained from the Delaware Interstate Highway Division upon payment of Ten Dollars ($10.00) for each set. Checks shall be made payable to Howard, Needles, Tammen & Bergendoff. Contract documents need not be returned and the above payment will not be refunded.

DELAWARE INTERSTATE HIGHWAY DIVISION
by: Garrett E. Lyons, Director
W. B. McKendrick, Jr., Chief Engineer
Delaware Interstate Highway Division
February 9, 1956

Bids: February 29, 1956

Pennsylvania Turnpike Commission
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 10:00 a.m., Eastern Standard Time, the 29th of February 1956, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room #1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

Contract No.	Interchange	Connecting Route	County
553-C	Mahoning Valley	U S 209	Carbon
554-C	Pocono	Pa. 940	Carbon
555-C	Wilkes Barre	Pa. 115	Luzerne
556-C	Wyoming Valley	Pa. 315	Luzerne
557-C	Scranton	U S 6 and 11	Lackawanna

Each Contract Number will be bid separately.

The work to be performed under each of the above contracts consists of the construction of Electrical System for the Utility Building and Toll Plaza and all work incident thereto at each of the interchanges. The Utility Buildings and Toll Plazas are to be constructed by others. Plumbing and Heating will be installed by others.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on 9 February 1956 at the office of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania, at the Commission's Field Office in Conshohocken, Pennsylvania, 10th Avenue and Hallowell Street and at the Commission's Field Office in Lehighton, Blakeslee Boulevard, Lehighton, Pennsylvania. Plans, specifications and other contract documents will not be available before this date for mailing to prospective bidders.

Plans and contract documents for each location may be obtained from the Commission upon deposit of ten ($10.00) dollars for each set. No refund will be made for plans and/or contract documents returned, unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five ($5.00) dollars per copy.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The Pennsylvania Turnpike Commission reserves the right to waive any informalities in or to reject any or all bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
31 January 1956

Bids: March 12, 1956

Water Treatment Plant

ADVERTISEMENT FOR BIDS

Sealed bids or proposals for furnishing materials and labor for constructing a Water Treatment Plant for the City of Ashland, Kentucky, will be received by the City Manager, City Building, Ashland, Kentucky, until one o'clock (1:00) P.M., Eastern Standard Time, March 12, 1956, when said proposals will be publicly opened and read in the Chambers of the City Commission, City Building, Ashland, Kentucky.

This work will be known as "Water Treatment Plant" and includes the construction of reinforced concrete basins, building substructures, building superstructures, piping, valves, water treating equipment, and filters and appurtenances.

Each proposal shall be addressed to the "City Manager, City Building, Ashland, Kentucky," sealed and endorsed "PROPOSALS FOR WATER TREATMENT PLANT."

Each proposal must be made on a blank proposal form for such purpose and must contain the full name and address of each person or company interested. The proposal shall be accompanied by a bond in the sum of ten per cent (10%) of the bid satisfactory to the City of Ashland or by a certified check in the sum of ten per cent (10%) on some solvent bank as a guaranty that if the bid is accepted a contract will be entered into and its performance properly secured within ten days after written notification of acceptance is sent. Proposal bonds shall be accompanied by proof of authority of the official or agent signing the bond together with a recent financial statement of the surety company.

The check of the successful bidder will be returned if the contract is executed and the necessary bond furnished, and to the unsuccessful bidders after award is made.

The City of Ashland, through its City Manager, reserves the right to accept any bid or reject any or all bids should it deem it to be for the best interests of the City of Ashland, Kentucky.

Plans, specifications, and form of proposal and contract may be obtained at the office of the City Manager, Ashland, Kentucky, or Alfred LeFeber & Associates, Consulting Engineers, 2933 Woodburn Avenue, Cincinnati 6, Ohio, upon deposit of $25.00 for each set of documents so obtained. The full amount of the deposit for one set of documents and one-half of the deposit for any additional sets of documents will be refunded to each bidder who submits a formal proposal to the City of Ashland, Kentucky, and who also returns the plans and specifications (on additional sets) in good condition to the Engineer within ten (10) days after his bid security has been returned to him.

Equipment manufacturers, sub-contractors, and others who do not submit formal proposals to the City of Ashland, Kentucky, will be refunded one-half (½) the amount of the deposit for all sets of complete documents including plans and specifications returned in good condition within ten (10) days after the opening of bids. No refund will be made for documents received after this ten (10) day period.

The City of Ashland reserves the right to hold all bids for thirty (30) days before final acceptance thereof.

CITY OF ASHLAND, KENTUCKY
By: J. P. Brownstead
City Manager

Bids: February 29, 1956

Pennsylvania Turnpike Commission
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 10:00 a.m., Eastern Standard Time, the 29th of February 1956, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room #1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

Contract No.	Interchange	Connecting Route	County
553	Mahoning Valley	U S 209	Carbon
554	Pocono	Pa. 940	Carbon
555	Wilkes Barre	Pa. 115	Luzerne
556	Wyoming Valley	Pa. 315	Luzerne
557	Scranton	U S 6 and 11	Lackawanna

Each Contract Number will be bid separately.

The work to be performed under each of the above contracts consists of the construction of the Utility Building and Toll Plaza and all work incident thereto at each of the interchanges; not including, however, the Plumbing System, the Heating System, the Electrical Work or the Seeding and Sodding, except as noted in the specifications or as shown on the Contract Documents.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on 9 February 1956 at the office of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania, at the Commission's Field Office in Conshohocken, Pennsylvania, 10th Avenue and Hallowell Street and at the Commission's Field Office in Lehighton, Blakeslee Boulevard, Lehighton, Pennsylvania. Plans, specifications and other contract documents will not be available before this date for mailing to prospective bidders.

Plans and contract documents for each location may be obtained from the Commission upon deposit of ten ($10.00) dollars for each set. No refund will be made for plans and/or contract documents returned, unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five ($5.00) dollars per copy.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The Pennsylvania Turnpike Commission reserves the right to waive any informalities in or to reject any or all bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
31 January 1956

OFFICIAL PROPOSALS

Bids: March 27, 1956

Construction of Sewage Treatment Plant

NOTICE TO CONTRACTORS
LOUISVILLE AND JEFFERSON COUNTY
METROPOLITAN SEWER DISTRICT
OF
JEFFERSON COUNTY
KENTUCKY

Sealed bids for constructing sewage treatment plant in Jefferson County, Kentucky will be received at Office of Metropolitan Sewer District, 412 West Market Street, Louisville, Kentucky, until Twelve Noon Central Standard time on Tuesday March 27th 1956 and read at that time.

Project includes construction of eight 1 and 2 story structures from twenty by forty feet to forty five by 190 feet; four sedimentation tanks each 70 by 275 feet; three digestion tanks each 100 feet diameter, two elutriation tanks each 55 feet diameter; sewers; channels, conduits and pipe lines; equipment; roads; and appurtenant work. Drawings and contract documents may be examined and obtained at above office and examined at Office of Metcalf and Eddy Engineers, 1300 Statler Building, Boston 16, Massachusetts; $150.00 deposit on drawing and documents.

Bid security $150,000.00 certified check on a Louisville, Kentucky or New York bank, payable to the District. Successful bidder must furnish one hundred per cent performance bond.

Louisville and Jefferson County
Metropolitan Sewer District
Morris Forman—Chief Engineer

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4621) will be received at Goleta, California, until March 15, 1956, for furnishing labor and materials for Chlorination and Control House for Tecolote Tunnel, Cachuma Project, California. Location near Goleta, California. Principal items are 100 cu. yds. excavation; 290 barrels furnishing and handling cement; 25 cu. yds. concrete; constructing chlorination and control house; and other work. Completion time 180 days. For particulars, address Bureau of Reclamation, P. O. Box 2511, Sacramento 11, California; P. O. Box 701, Goleta, California; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: March 12, 1956

ADVERTISEMENT FOR BIDS

Intake Pier and Pump Station

Sealed bids or proposals for furnishing materials and labor for constructing an Intake Pier and Pump Station for the City of Ashland, Kentucky, will be received by the City Manager, City Building, Ashland, Kentucky, until one o'clock (1:00) P.M., Eastern Standard Time, March 12, 1956, when said proposals will be publicly opened and read in the Chambers of the City Commission, City Building, Ashland, Kentucky.

This work will be known as "Intake Pier & Pump Station" and includes the construction of reinforced concrete intake pier, brick superstructures, access bridge, piping, valves, pumps, meter and appurtenances.

Each proposal shall be addressed to the "City Manager, City Building, Ashland, Kentucky" sealed and endorsed "PROPOSAL FOR INTAKE PIER & PUMP STATION."

Each proposal must be made on a blank proposal form for such purpose and must contain the full name and address of each person or company interested. The proposal shall be accompanied by a bond in the sum of ten per cent (10%) of the bid satisfactory to the City of Ashland or by a certified check in the sum of ten per cent (10%) on some solvent bank as a guaranty that if the bid is accepted a contract will be entered into and its performance properly secured within ten days after written notification of acceptance is sent. Proposal bonds shall be accompanied by proof of authority of the official or agent signing the bond together with a recent financial statement of the surety company.

The check of the successful bidder will be returned if the contract is executed and the necessary bond furnished, and to the unsuccessful bidders after award is made.

The City of Ashland, through its City Manager, reserves the right to accept any bid or to reject any or all bids should it deem it to be for the best interests of the City of Ashland, Kentucky.

Plans, specifications, and form of proposal and contract may be obtained at the office of the City Manager, Ashland, Kentucky, or Alfred LeFeber & Associates, Consulting Engineers, 2333 Woodburn Avenue, Cincinnati 6, Ohio, upon deposit of $20.00 for each set of documents so obtained. The full amount of the deposit for one set of documents and one-half of the deposit for any additional sets of documents will be refunded to each bidder who submits a formal proposal to the City of Ashland, Kentucky, and who also returns the plans and specifications (on additional sets) in good condition to the Engineer within ten (10) days after his bid security has been returned to him.

Equipment manufacturers, sub-contractors, and others who do not submit formal proposals to the City of Ashland, Kentucky, will be refunded one-half (½) the amount of the deposit for all sets of complete documents including plans and specifications returned in good condition within ten (10) days after the opening of bids. No refund will be made for documents received after this ten (10) day period.

The City of Ashland reserves the right to hold all bids for thirty (30) days before final acceptance thereof.

CITY OF ASHLAND, KENTUCKY
By: J. F. Brownstead
City Manager

Bids: Febraury 29, 1956

Pennsylvania Turnpike Commission Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 10:00 a.m., Eastern Standard Time, the 29th of February 1956, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room #1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

Contract No.	Interchange	Connecting Route	County
553-A	Mahoning Valley	US 209	Carbon
554-A	Pocono	Pa. 940	Carbon
555-A	Wilkes-Barre	Pa. 115	Luzerne
556-A	Wyoming Valley	Pa. 315	Luzerne
557-A	Scranton	US 6 and 11	Lackawanna

OFFICIAL PROPOSALS

Each Contract Number will be bid separately.

The work to be performed under each of the above contracts consists of the construction of the Plumbing System for the Utility Building and Toll Plaza and all work incident thereto at each of the Interchanges. The Utility Buildings and Toll Plazas are to be constructed by others. Heating and Electrical Work will be installed by others.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on 9 February 1956 at the office of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania, at the Commission's Field Office in Conshohocken, Pennsylvania, 10th Avenue and Hallowell Street and at the Commission's Field Office in Lehighton, Blakeslee Boulevard, Lehighton, Pennsylvania. Plans, specifications and other contract documents will not be available before this date for mailing to prospective bidders.

Plans and contract documents for each location may be obtained from the Commission upon deposit of ten ($10.00) dollars for each set. No refund will be made for plans and/or contract documents returned, unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

Copies of specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five ($5.00) dollars per copy.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The Pennsylvania Turnpike Commission reserves the right to waive any informalities in or to reject any or all bids.

PENNSYLVANIA TURNPIKE
COMMISSION
James F. Torrance
Secretary and Treasurer
Harrisburg, Pennsylvania
31 January 1956

SEARCHLIGHT SECTION

This index is published as a convenience to the reader. Every care is taken to make it accurate but SEARCHLIGHT SECTION assumes no responsibility for errors or omissions.

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OFFICIAL PROPOSALS

Bids: February 28, 1956

ADVERTISEMENT

Contract PN-140.018

THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
WATERMAN TERMINAL
PARKING AREA

Sealed proposals for construction of a parking area and floodlighting at the Waterman Terminal at Port Newark, New Jersey, will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, February 28, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 9, 1956

Bids: March 6, 1956

ADVERTISEMENT

Contract LT-160.023

THE PORT OF NEW YORK AUTHORITY
LINCOLN TUNNEL
THIRD TUBE
TUNNEL FINISH

Sealed proposals for the interior finish for the Third Tube of the Lincoln Tunnel will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, March 6, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1112. Documents will be furnished upon deposit of $50.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $50.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 9, 1956

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4622) will be received at Denver, Colorado, until March 22, 1956, for furnishing two oil-pressure, cabinet-type, actuator governors for regulating the speed of two 16,750-horsepower, 180-rpm, vertical-shaft hydraulic turbines for Glendo Power Plant, Missouri River Basin Project, Wyoming. Delivery is desired within 540 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

EMPLOYMENT OPPORTUNITIES

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Experienced Bridge Construction Superintendent please submit work history and references preliminary to interview, location: Maryland. P-8922, Engineering News-Record.

Administrative Civil Engineer, over 45. P.E. with a background in municipal engineering and specific experience in sewer design and drainage. Must be able to handle administration and personnel problems. Salary $8,400 per year and up. Location Southeastern Michigan. Furnish experience record and references, well detailed. P-8880, Engineering News-Record.

Civil Engineer graduate at least 35, with minimum 5 years municipal engineering. Capable design of sewers and small sewage treatment plants. Salary open. Location Southeastern Michigan. Furnish experience record and references. P-8885, Engineering News-Record.

Engineers one or two years experience in structural design or recent graduates. Consulting engineers office Newark, N. J. Give education, experience and salary. P-8890, Engineering News-Record.

Electrical, Civil, mechanical engineers by consultant on buildings, bridges, highways. Box 121, Station H, Toledo, Ohio. Replies acknowledged.

Heavy Construction Superintendent considerable experience heavy concrete work, sewerage & waterworks construction, general heavy underground work in N. Y. State. Must be thoroughly competent, able to assume responsible position. Engineering background preferred. Start immediately. Permanent position with advancement for qualified person. P-8926, Engineering News-Record.

Superintendent for earth moving and rock excavation to be located in New York and neighboring states. Must be experienced with all phases of earth moving. Salary open. P-8845, Engineering News-Record.

Wanted: Bridge & Highway designers with office and field experience by consulting engineering firm in Pennsylvania. Give complete details and salary desired. P-8381, Engineering News-Record.

Wanted designer or detailer experienced preparation of plans for sewage pumping station, sewage treatment plant and kindred projects. Permanent position with established consulting engineer in Southeast. Excellent opportunity for advancement. Please furnish experience record, training, salary desired, telephone number, etc., in first response. Replies confidential. P-9019, Engineering News-Record.

Graduate Engineers under 30: with military service completed. Excellent opportunities in both field and office for training and rapid advancement. Starting salaries dependent upon experience. Send complete information and recent photograph. Dondlinger & Sons Const. Co., P.O. Box 2033, Wichita, Kansas.

Registered Civil and Structural Engineers with administrative experience for work in central states. Please give complete resume of experience and education. Reply to P-9044, Engineering News-Record.

Engineers for design and construction supervision on roadways. Projects in central part of U.S. In reply give age, education, detail of experience, professional qualifications, salary requirements and three references. Reply to P-9045, Engineering News-Record.

Four Salesmen: To sell concrete form accessories and tubular scaffolding—in Chicago, New York, Houston & Los Angeles. Must be experienced and thoroughly acquainted in area. Protected territory. Liberal commission against guaranteed draw. Give full details. Confidential. This is the chance of a lifetime for right man. Write P-9039, Engineering News-Record.

Municipal Engineer must be registered or able to obtain registration in Ohio; experience in municipal work desirable. Recent graduates also needed as E.I.T.'s; salary is dependent upon experience and qualifications. Apply 506 Municipal Building, Dayton 2, Ohio.

Male Help Wanted: Experienced structural steel detailers. Only men experienced in making detail drawings for fabricating shop need reply. Excellent working conditions with opportunity for advancement for good men. Give references and salary expected in application. Southern Engineering Company, Charlotte, N. C.

Engineer-Estimator—Familiar with highway procedures, practices and administration. Position in office of progressive general contractor in Central Ohio. Permanent and immediate. P-9043, Engineering News-Record.

Teaching positions available in civil, mechanical engineering. Write Administrative Dean, Fresno State College, Fresno 4, California.

Design Engineer for sewage treatment plants and water system, also instrument man. Write giving age, past experience, education, availability and salary requirements. In Great Lakes area. P-9148, Engineering News-Record.

Party Chief for professional Engineer—Land surveyor. Graduate preferred. Sober, conscientious, with drafting and field experience. Replies should cover items above, salary desired, and references. Reply P. O. Box 464 Bessemer, Alabama.

Engineer—with civil engineering background for position of Assistant City Engineer or Plan Engineer. Duties include sewer and water main design and field work. Salary range $385 to $475 per month. Apply City Engineer, City Hall, South Milwaukee, Wisconsin.

Graduate engineer, mechanical or civil, with actual job operational experience with major national construction or engineering firm or marine construction firm for sales engineering position representing American Hoist & Derrick Company in the Texas, Louisiana and Tennessee area. Send complete confidential resume to the President, American Hoist & Derrick Company, St. Paul 1, Minnesota.

Wanted: Engineer with at least five years' experience in sewage and water line construction, with some supervisory background. Opportunity for permanent connection with long established contracting firm. Please state qualifications, references, experience and salary wanted. Write to La Fera Contracting Co., 149 Verona Avenue, Newark 4, New Jersey, or phone HUmboldt 3-8341 any morning, or come in any morning.

Estimator—With field experience on heavy construction work and underground utilities such as water and sewage treatment plants; pumping stations; excavation and earth moving jobs; sewer and water lines; site work; drainage, etc. Reply by letter to Virginia Engineering Company, Inc., General Contractors, Newport News, Virginia, giving field and office experience, age, education, phone number, salary, when available, etc. Permanent position for man meeting our requirements.

Civil Engineer—Senior—College Graduate— by established public utility supervisory-consulting organization. Minimum 7 years experience, for work in connection with design of hydro systems, also structural and foundations for steam, hydro and Diesel plants. Location New York — some travel future. Reply stating age, education, experience, personal particulars and minimum salary expected. P-9179, Engineering News-Record.

Estimator: Midwestern Building Contractor. Position permanent, opportunity excellent. Furnish experience record, salary desired, address. P-9182, Engineering News-Record.

Excellent permanent opportunity for qualified office man, under 35, with accounting training and experience in construction, but latter not essential. College graduate preferred. Send experience record to Cunningham Brothers, Inc., General Contractors, Beloit, Wisconsin.

Structural Engineer—with some bridge and highway design experience—permanent—for small progressive office in Connecticut. Must have a minimum of four years experience. Office also doing structural design of buildings in steel and concrete. Opportunity for right man. Give full particulars in first letter, education, experience and salary desired. P-9195, Engineering News-Record.

Having opening for well qualified bridge foreman and superintendent in Florida. Apply to P-9239, Engineering News-Record, giving complete background, references, salary desired, etc.

(Continued on following page)

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant — **Civil Service Opportunities . . .** — **Employment Agencies**
Positions Wanted — **Selling Opportunities Wanted** — **Employment Services**
Part Time Work — **Selling Opportunities Offered** — **Labor Bureaus**

DISPLAYED —RATES— **UNDISPLAYED**

The advertising rate is $28.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
An advertising inch is measured 7/8" vertically on a column—3 columns—30 inches to a page.
Subject to Agency Commission.

$2.10 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.
Box Numbers counts as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

Send NEW ADS to ENGINEERING NEWS-RECORD, 330 W. 42nd St., N. Y. 36, N. Y. for February 23rd issue closing February 13th

POSITIONS VACANT

(Continued from preceding page)

Wanted: Highway and structural draftsmen for work on expressways with N.Y.C. consulting engineers. Recent graduates considered. P-9188, Engineering News-Record.

Wanted: Experienced highway and structural engineers for work on expressway design with N. Y. C. consulting engineers. P-9185, Engineering News-Record.

Paving Engineer—Overseas Airbase. Mild climate. High salary. Family Accommodations available. Patchen & Zimmerman Engineers, 140 Nassau St., N. Y. 38, N. Y. COrtlandt 7-0322.

Paving Supt. Northern New Jersey Contractor. Experience all phases asphalt & concrete paving operations. Send resume and photo to P-9212, Engineering News-Record.

Structural designers and checkers. For expanding organization on industrial and power plant work. Advancement, overtime, liberal benefits. Marbarry Corp., 140 Nassau Street, New York 38, N. Y. COrtlandt 7-0322.

General Superintendent to assume complete charge of all field operations building contractor located Northern Ohio. Please give age, experience, references and salary desired. Want top man only. P-9205, Engineering News-Record.

Superintendent wanted by concrete products plant in New York area. P-9232, Engineering News-Record.

Structural Steel Draftsmen. Excellent opportunity for two experienced structural steel detailers with progressive Mid-West fabricating plant. Five day week, generous fringe benefits. Send brief resume of training and experience to P-9229, Engineering News-Record, including salary requirements. Company will arrange for personal interview and pay moving expenses for qualified applicants.

Civil Engineer—to locate in Dallas or Chicago Area. Must have sales ability and preferably 2-5 years concrete design experience. Will need to travel to cover Southwestern States or Mid-Western States, introducing new products for construction. Salary, commissions, all travel expenses, and excellent opportunity for advancement with progressive organization. Please write giving resume of background to, General Sales Manager, Celite Division, Johns-Manville Products Corp., 22 East 40th Street, New York 16, New York.

POSITIONS WANTED

Chief Estimator, project manager, construction executive, available for association with active, competitive general contractor. Proven profitable record for 15 years. Salary bracket $15,000 per year. PW-8855, Engineering News-Record.

Controller seeking position with architects or engineers. Unusual management experience including budget, cost control, accounting, administration and organization. Please define position and salary. PW-9112, Engineering News-Record.

Executive Construction Engineer, 37; ability and experience unique in planning, estimating, scheduling, coordinating and administering engr'g.-constr. projects, ind'l.-process plants. PW-9172, Engineering News-Record.

Engineer, registered, aggressive—8 years mech-struct design and installation, desires responsible position with engineer or contractor-engineer. Resume on request. PW-9171, Engineering News-Record.

INDUSTRIAL ENGINEERS

College graduates with minimum 6 years' work experience in industrial engineering, cost analysis or related activities. To provide industrial engineering services ranging in scope from shop layout to organizational changes in major oil producing operations.

Write, giving full particulars regarding personal history and work experience. Please include your telephone number.

Recruiting Supervisor, Box 93

ARABIAN AMERICAN OIL COMPANY
505 PARK AVENUE
NEW YORK 22, N. Y.

WANTED

Superintendent field clerk, concrete foremen. Fine grade foreman, truck foreman, batch plant foreman, master mechanic. Operating jobs open, must be top men. Fully experienced in government, airport and highway portland cement concrete construction. Give past employment record in full. Needed by April 15th.

NORTHWESTERN ENGINEERING CO.
Box 581 — Black Eagle, Montana

POSITIONS WANTED

Superintendent of construction at present in charge of erection of large atomic reactor, will be available on completion for reengagement in similar field. Competent to take charge of project domestic or foreign. Write PW-9017, Engineering News-Record.

Sewer Superintendent or Foreman, aggressive resourceful, extensively experienced in sewerage and drainage construction of interceptors and laterals; desires permanent connection with ambitious, consistent contractor. PW-9007, Engineering News-Record.

Electrical Engineer: Thirty years experience with power company, consulting engineers, field installations, design, operation, all phases of electrical work. Married, no children. Free to travel. Personal interview your convenience. PW-9121, Engineering News-Record.

Construction Executive, buildings and heavy construction, sound experience bid to completion, qualified to manage a project, branch office or a business, seeks new connection where top man is required. Minimum $15,000, PW-8792, Engineering News-Record.

Professor or Associate Professor—Registered Civil Engineer, BS, MS with 5 years industrial experience desires permanent teaching position in Middle Atlantic Seaboard area. Specialization in soil and structures. Available, Sept. 1, 1956. P-9180, Engineering News-Record.

Master Mechanic or Equipment Supt. heavy earth moving, concrete and asphalt plant erection, experienced in all phases of repair, operation, maintenance and shop management of heavy equipment. PW-9170, Engineering News-Record.

HIGHWAY ENGINEER

Well established Midwestern consulting firm requires services of an experienced highway engineer to head up extensive highway design projects. Man between 30 and 45 years of age who has had experience as Chief Road Design Engineer with a State Highway Department, or man with comparable position with private firm, is preferred. Starting income of $10,000 with excellent opportunity for advancement. Applicants must be thoroughly grounded in highway design techniques, be able to perform contract work with clients, and direct large force of designers and draftsmen on diverse highway projects. Give age, education, experience, and earliest date available. Replies will be held in strict confidence.

P-9240, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SALES ENGINEERS

A major steel company has need for sales engineers to promote and sell fabricated products in middle Atlantic states. Excellent opportunities for men 25 to 30 years old with engineering background and a desire for sales work. Attractive starting salary with company car, expenses and bonus plan.

P-8324, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS WANTED

Secretary (Woman). Pleasant, cooperative. 17 yrs. experience engineering field-shorthand, typing, bookkeeping, cost accounting, office management, $90 wk min. Available immediately. N. Y. City. PW-9194, Engineering News-Record.

Supt of Construction for either owner or architects or both. Now employed jointly by both on buildings. Seeking change of location to So. California. PW-9191, Engineering News-Record.

Responsibility and Advancement sought by P.E. age 26, with experience in sewers, drainage, roads, surveying, structures. C.E. Master's degree. Capable all phases office work, supervision, contact with people. PW-9210, Engineering News-Record.

Specifications Engineer, estimator, P.E. extensive experience on highway construction, municipal work. Full, part-time with consulting engineer, contractor or service organization. PW-9201, Engineering News-Record.

Proj. Mgr. or Gen. Supt.—Extensive exper. industrial and chemical plant const. Have proven record. Available now. PW-9204, Engineering News-Record.

Superintendent, age 35. Ten years responsible charge, last six sewage disposal plant construction. Prefer sewage work in Mid-west. Engineering background, excellent reference, available March or April. PW-9228, Engineering News-Record.

Estimator, Chief, heavy construction. Foundations, excavation, concrete structures. Construction problems requiring ingenuity. For progressive contractor or consultant with contractor's cost viewpoint. Broad experience in New York area. PW-9230, Engineering News-Record.

Purchasing agent—7 years major company on power plant projects. Experience purchasing all types materials and equipment also expediting, traffic, warehousing and stores control. Desires permanent location. Age 32, college, family. PW-9231, Engineering News-Record.

Wanted position as Architects representative or superintendent. Experienced on industrial, public or institutional work. Graduate C.E. Salary range $10,000 to $12,000. Location immaterial. Available about April 1, 1956. PW-9234, Engineering News-Record.

Superintendent, Bldg. construction; industrial & commercial bldgs; hospitals, schools, housing projects, churches etc; desire similar position with reliable organization. 25 years proven experience. Prefer near New Jersey. PW-9224, Engineering News-Record.

Proven executive engineer available soon for managerial, operational, marketing, or pioneering position with firm desiring development of business in inland southwestern states. B.S., bilingual, much travelled. Write aims to PW-9233, Engineering News-Record.

PART TIME WORK WANTED

By Two experienced bridge designers, designing or detailing bridges—simple or continuous—reinforced concrete or steel—plate girders or trusses. PTWW-9116, Engineering News-Record.

ENGINEERS
HIGHWAYS AND BRIDGES
Designers
Draftsmen
Office Engineers
Maintenance Engineers
Project Engineers
Location Engineers
Soils & Materials Engineers

Domestic and Overseas Assignments
Knowledge of Foreign language necessary in some classifications.

ARCHITECTS
Architectural Draftsmen

Write, giving full particulars concerning education, experience, personal history and availability to:

Richard L. Shaw
Personnel Director

Michael Baker, Jr., Inc.
Consulting Engineers
Baker Building **Rochester, Penna.**

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WE ARE A distinguished international company pioneering in all phases of radically new industrial design and construction, including Atomic Energy. A company with limitless future in the new age we are helping to create by a fast moving, really professional team of

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WE WANT Qualified electrical, structural, mechanical, and architectural

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Engineers who wish to investigate these opportunities should submit a resume stating their education, experience and salary requirements to:

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ENGINEERS AND BUILDERS
1783 East 11th Street Cleveland 14, Ohio

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STRUCTURAL
HIGHWAY
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for work on
Bridges, Expressways, Turnpikes

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PAID VACATION, SICK LEAVE HOSPITALIZATION, LIFE INSURANCE

INCLUDE EDUCATION, EXPERIENCE, REFERENCES AND SALARY EXPECTED IN APPLICATION LETTER

Howard, Needles, Tammen & Bergendoff
55 Liberty St. **New York 5, N. Y.**

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(Supervisory)

Graduate engineers with minimum 7 years' experience designing, selecting, specifying and/or supervising operations of construction equipment, such as crawlers, rubber-tired tracors, shovels, cranes, air compressors, welding machines, pumps, mixers, spreaders, fork lifts, etc.

To consult with manufacturers and suppliers on selection and modification of the above-mentioned equipment. For company's Equipment Engineering Division located in New York City. Salary good; liberal benefits.

Write giving full particlars regarding personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 89

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505 PARK AVENUE
NEW YORK 22, NEW YORK

BECHTEL

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CHEMICAL—MECHANICAL

Recent design experience on petroleum refineries or chemical plants. Assignments require thorough knowledge of heat exchangers, pumps, piping layouts, specification work and analysis of bids.

DESIGNERS
PIPING

with drafting and layout experience on petroleum refineries, central stations, steam power plants, compressor stations or related projects.

LIBERAL RELOCATION ALLOWANCES FOR ASSIGNMENT SAN FRANCISCO or NEW YORK ENGINEERING OFFICES

BECHTEL
Engineers-Constructors

Send Resume:
5 West 45th St. New York 17, N. Y.
220 Bush St., San Francisco, Calif.

Confidential interviews can also be obtained at: Scanlan Building, Houston, Texas, or Roosevelt Building, Los Angeles, Calif.

DESIGN ENGINEERS

CIVIL-Graduate, with minimum of 3 years experience in design of highways, streets, drainage or sanitary works.

STRUCTURAL-Graduate, with minimum 3 years experience in design of heavy engineering construction.

DESIGN DRAFTSMAN-Minimum 2 years experience in highway or heavy structural engineering projects.

COMPANY PAID HOSPITALIZATION, LIFE INSURANCE, RETIREMENT PLAN, AND VACATIONS.

SEND RESUME, REFERENCES, AND SALARY REQUIREMENTS TO:

PALMER AND BAKER, INC.
Consulting Engineers
P. O. Box 346 **Mobile, Alabama**

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OPENINGS NOW & IN IMMEDIATE FUTURE FOR:

. . . Design Engineers
. . . Lab Engineers
. . . Draftsmen
. . . Inspectors
. . . Party chiefs
. . . Instrument Men
. . . Rodmen

(On overseas Airbase Mail Detailed Resume.)

P-8825, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

SUPERINTENDENT
Mass. contractor wants engineering superintendent experienced in highway construction. Ability to take charge. Reply stating qualifications and salary desired.

P-9063, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

STRUCTURAL ENGINEER

Graduate civil engineer interested in structural design engineering. Experience not required. Excellent opportunity with consulting engineering firm. Liberal benefit plans and good working conditions. Location Middle West. Send resume of education and experience with salary requirements to:

P-9050, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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McKEE's expansion program has created many new openings in our Refinery, Metals and Industrial Divisions.

These are permanent positions with excellent oportunities for advancement in one of the world's largest engineering organizations.

With a fifty-year history of successful operation and continuous growth, McKee designs and constructs Petroleum Refineries, Chemical Plants, Blast Furnaces, Steel Plants, Ore Preparation Facilities and Industrial Plants all over the world. This wide diversification offers a variety of opportunities to qualified engineers, with no age limitations, in the following fields:

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Adequate housing in good residential communities is available in Cleveland and surrounding suburbs. Excellent schools and colleges offer educational advantages. McKee makes generous allowances for transportation and moving expense.

Interviews will be arranged for those who qualify. Reply by letter giving education and experience. All letters will be answered and kept strictly confidential. PLEASE WRITE TO:

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for work on
Bridges, Expressways, Turnpikes

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INCLUDE EDUCATION, EXPERIENCE, REFERENCES AND SALARY EXPECTED IN APPLICATION LETTER

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Fully qualified and experienced building estimator to locate in St. Louis. Experienced in preparing estimates on large building projects. Position permanent with excellent opportunity and salary. Retirement at no cost to you, stock purchase plan, group life and hospital insurance and other fine advantages. In reply please furnish experience record, training, desired salary, telephone, address and availability.

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Walkers

Shifters for Shaft and Tunnel Department

Contracting Division, Dravo Corporation

Tunnel job lasting about 30 months.

Location:
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Write giving full details of experience and qualifications to

W. P. WARNER,
Dravo Corporation,
Fifth and Liberty Avenues,
Pittsburgh 22, Pennsylvania.

ASSISTANT CHIEF ESTIMATOR

Should have 10-15 years experience estimating all phases of engineering and construction work for petroleum refining and chemical process plants.

Successful applicant will supervise and prepare estimates for proposals and contracts for a large engineer-contractor organization, reporting directly to Chief Estimator.

Responsibility, leadership qualities, and ability to negotiate with clients are essential, and an engineering degree is desirable. This opening is known to our employees.

Send Complete Resume with Photo

P-9088, Engineering News-Record
520 N. Michigan Ave. Chicago 11, Ill.

STRUCTURAL ENGINEER

Structural steel designer and estimator for industrial buildings and miscellaneous steel structures. Applicant should be graduate engineer, preferably 35-45 years old, with a minimum of 5 years of actual structural steel design experience. Permanent employment with top pay, paid vacations, group insurance plan, pension plan. Excellent opportunity. Location is in Mid-West. Employer is nationally known, well established steel fabricator.

Reply fully, giving resume of experience, education, age and salary requirements to

P-8946, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

INSPECTOR ENGINEER

Graduate Mechanical Engineer with minimum 3 years' experience in work involving thorough knowledge of the materials and equipment used for oil producing, refining and supporting facilities. Knowledge A.P.I. and A.S.M.E. and other production codes required. For New York office, however, job requires extensive travel throughout the U. S. To inspect and approve purchased equipment and materials.

Salary commensurate with education and work experience. Liberal benefit program. Write outlining personal history and work experience.

Recruiting Supervisor, Box 114

ARABIAN AMERICAN OIL COMPANY
505 PARK AVENUE
NEW YORK 22, N. Y.

SPECS WRITER OVERSEAS

Degree or equivalent, plus minimum 8 years as Specs Writer. 12 months contract, single status, probable two years duration.

Rush complete resume if qualified

P-9175, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

Due to our expansion program, the following permanent positions are available in a large pulp and paper manufacturing plant in the Upper Midwest:

Design and Construction Estimator
Instrumentation Engineer
Piping Design and Layout Engineer
Heating and Ventilating Engineer

The individuals being sought should be graduate engineers with a minimum of five to ten years experience who are well versed in their respective fields. Our employees know of these openings. Your confidential reply should include personal, educational and work history together with salary thinking. Write

P-9199, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED: ASS'T TRAFFIC ENGR.

For traffic engineering department just recently established. Salary range $554 to $670 a month with maximum salary obtainable through annual and longevity increases. Registration as a professional engineer required. Applications accepted until the needs of the service are filled. Write Personnel Department, City Hall, Madison 3, Wis.

Wanted "CITY ADMINISTRATOR"

City of San Carlos, California (pop. approx. 17,000) invites applications from qualified men. Salary range $700 to $865. per mo. depending on experience and qualifications. City Administrator experience preferred. Contact Estelle E. Heffner, Secretary of Civil Service Commission, City Hall, San Carlos, California for applications and qualifications. Receipt of applications closes March 31, 1956.

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complete with all equipment

in excellent condition and suitable for large construction job. Price including six fine tires $750.00

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3—DW 21 Cat Scrapers
7—D-8 Cat Dozers

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4-1107

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L-80-K Lorain Crane
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60 H.P. Vertical Oil Fired Boiler
E-4 Pile Extractor
#7 Pile Hammer
Clyde 3 drum Hoist
I.R. 315 Portable Air Compressor

Subject to Prior Sale

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D-8 Angledozer #2U 11994
D-7 Bulldozer #4T-1831
Both machines in excellent condition.

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Tel: Greg. 1-7803

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One—10" Gorman-Rupp Centrifugal Pump

on 4 wheel rubber tired trailer 1954 Model, driven by 6 cylinder, self starting water cooled Hercules engine.

Contact Director of Public Works
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1954 International Bulldozer TD-18A. 1900 original hours on the clock. A-1 condition. Trial on the job arranged. Write box No.

FS-9203, Engineering News-Record
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Any heavy section, long lengths

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NEW STEEL WIDEFLANGED BEAMS

30" x 172#	28,000#
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25 - 30 - 40 Ton Brownhoist, Ohio, Orton Locomotive Cranes, new 1940, 1945.
25 - 35 - 55 - 60 Ton Diesel Locomotives.
All in excellent condition. No reasonable offer refused.
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We assure you our prices will be the best obtainable.

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4161 Marion dragline 110' boom, 5 yd. bucket
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Service factor 1.15 at rated volts 60 cycles
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Volts 2300 400-500 C rise at 60-50 CY
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#WE6806921
Model 5KF 444AV1—frame 444Z—type KF
Volts 2200—F.L. Amp 9.9 3 PH
Cycles—60 Speed full load 3550.
40 HP continuous 40 degree C Rise—
No. 5359389
Service 1.15 at rated V and Cyc.

No. 3) Induction Motor
General Electric Model 5KF 444AV2—
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Volts—2200 F.L. Amp. 7.7—3 PH
Cycles 60 speed full-load 3565
30 HP continuous 40 degree C rise—
No. 5359388
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George F. Scaptura, clerk
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125 KVA
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Editorials

More Heat Than Light

REOPENING OF THE DEBATE OVER THE QUESTION OF WHO PAYS for relocating water, gas, sewage and electric lines that get in the way of highway construction is a certainty before Congress finishes hearings on a new road bill. And recollections of what was said last year, plus signs of a gathering storm of new arguments, show that, somewhat suggestive of the subject, more heat than light is apt to be generated.

Last year, Congressmen, who oppose including utility relocations in highway construction charges, stated simply that the utility companies were lucky to have free rights-of-way along the roads without expecting the government to relocate their lines for them. This rather intemperate argument answered an equally extreme contention by the private utilities that they had no responsibility in the matter whatsoever.

Now comes the American Water Works Association —speaking largely for publicly owned utilities—with an appeal to its members to let all Congressmen know that utilities "have as much real right to be below the street as motor cars have the right to use the street surface." This would not be a debatable point, except that the AWWA attempts to use it to prove that the public utilities should be completely relieved of relocation costs. It cites, for example, that water carts once used the highways to bring water to the householder, that sewage and garbage were once dumped in the streets and, going on to complete irrelevancy, that "in the middle ages the town criers went about the streets bringing news to the people." A Congressmen could reply to this argument that the water vending companies should have paid for the privilege of having their carts use the streets, and that their successors with water pipelines should also pay for the highway rights-of-way that they get free—and frequently obstruct by their maintenance operations.

The trouble with all this argument is that it tends to obscure reasonable solution of the problem with extreme claims, which can be countered by other extreme claims, or which are not credible in the first place. Thus, the AWWA says that, if the utilities have to pay for the relocation of their lines, the users of utility services will have to contribute twice to the cost of highway construction—once in taxes and again in increased utility rates. Obviously, if highway construction costs do not include utility relocation, the costs will be lower, and therefore taxes will be lower. There is no double charge involved, the problem being only who will pay and how the charge will be divided.

The AWWA is much more persuasive when it states that "existing state requirements that utilities pay their own relocation expense are the products of another era which did not contemplate such changes as the present (highway) program involves." That is a fact. Dual-lane roads and clover-leaf intersections often entail truly tremendous utility relocation expense. It is also probably a fact, as the AWWA points out, that if highway authorities had to pay for the utility relocations they would plan them more carefully, with consequent reduction in costs.

There is some precedent for the solution of the problem in the gradually lessening proportion of highway-railway grade separation costs that the railroads are asked to pay. Once required to pay 100 percent, the railroads now contribute as little as 10 percent in New Mexico, 15 percent in New York and 20 percent in Indiana. The Bureau of Public Roads and even Congress have recognized that early charges against the railroads were unreasonably high.

The utilities can argue that the railroads receive benefits—costwise and in improved service—from the elimination of crossings at grade, while utility service is not improved by merely moving pipes from one location to another. Such an argument is not without merit, but there will also be cases where new utility reconstruction resulting from relocation will reduce maintenance charges and permit better service too.

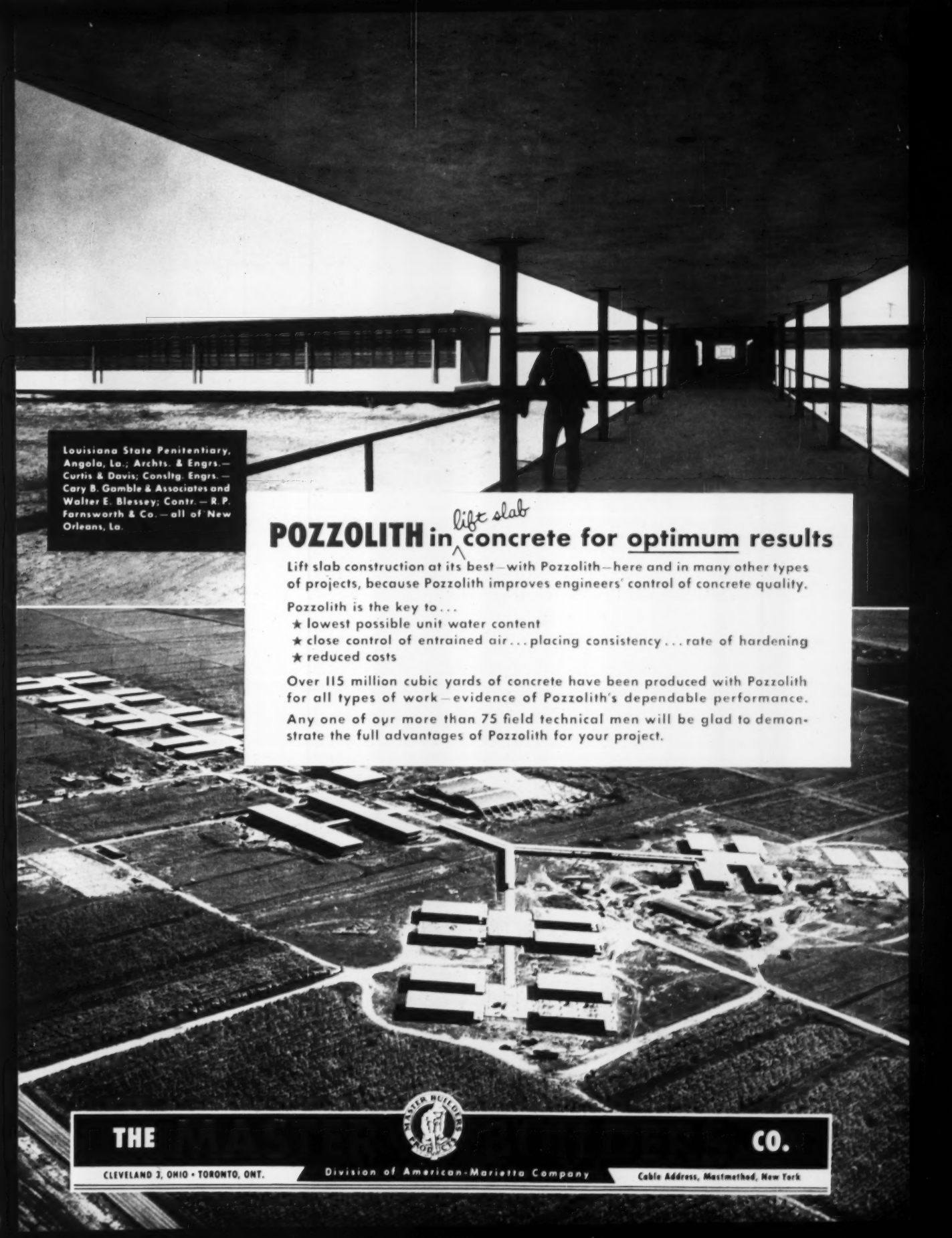
The important point is that realism and fairness are needed in this debate on who is going to pay for utility relocations. It may be that it is a question which only involves the utilities and the governments of the states in which they are located, or it may be that changing conditions require that the federal government be actively concerned. In either event, to be realistic, neither side can be expected to have a free ride. And to be fair, the utilities should have to shoulder a considerably less burden than the highway builders, at least in those cases where great terrain-disrupting operations are required, as for the interstate network. Less heat and more light is what the subject needs.

Rest Areas on Expressways

REST TURNOUTS ARE TO BE BUILT on the Merritt Parkway in Connecticut as part of a modernization program. That will be welcome news for people who use that parkway as part of a longer trip. It and the connecting parkways in New York and Connecticut have always lacked convenient places for users to stop and relax. To stop free of the traveled roadway, a driver has to mount a low curb and drive onto the grass.

Lack of a sufficient number of rest areas is a characteristic of other modern highways, notably the nation's older toll turnpikes, where, generally, stopping on the shoulders is forbidden except in emergencies. Some attempt to correct this is being made. For example, the New York State Thruway has a few rest areas, but more appear to be needed.

As a safety measure, money spent in building rest turnouts should be a good investment.



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